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Trace Organics and Inorganics in Distribution and Marketing Municipal Sludges

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TRACE ORGANICS AND INORGANICS IN DISTRIBUTION AND MARKETING MUNICIPAL SLUDGES

by

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16. ABSTRACT

The land application of municipal wastewater treatment sludges is widely practiced both as an economic treatment method for disposal and to provide an economic soil nutrient amendment for agricultural use. Concerns over the general disposal of sludge to land have focused on several adverse impacts from sludge-borne chemical and microbial agents, including phytotoxicity, domestic animal toxicity, and human health. Human health issues primarily emphasize whether these agents enter the food chain via: contamination of drinking water, accumulation in and on edible crops, and accumulation in animals and animal product used for food. The specific goals of this study were (1) to provide a database of 15 trace metals and 121 toxic organic compounds in stabilized sludge products form 26 U.S. cities which are distributed and marketed for various land application uses, and (2) to characterize selected sludge extracts from each city for non-target organic chemicals which might predominate in individual sludges. Results from this study would help determine if certain D&M sludges, based on their chemical content and concentration, should be treated as solid wastes to avoid adverse health risks to the general public.

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FOREWORD

The many benefits of our modern, developing, industrial society are accompanied by certain hazards. Careful assessment of the relative risk of existing and new man-made environmental hazards is necessary for the establishment of sound regulatory policy. These regulations serve to enhance the quality of our environment in order to promote the public health and welfare and the productive capacity of our Nation's population.

The complexities of environmental problems originate in the deep interdependent relationships between the various physical and biological segments of man's natural and social world. Solutions to these environmental problems require an integrated program of research and development using input from a number of disciplines. The Health Effects Research Laboratory, Research Triangle Park, NC, and Cincinnati, OH, conducts a coordinated environmental health research program in toxicology, epidemiology, and clinical studies using human volunteer subjects. Wide ranges of pollutants known or suspected to cause health problems are studied. The research focuses on air pollutants, water pollutants, toxic substances, hazardous wastes, pesticides, and non-ionizing radiation. The laboratory participates in the development and revision of air and water quality criteria and health assessment documents on pollutants for which regulatory actions are being considered. Direct support to the regulatory function of the Agency is provided in the form of expert testimony and preparation of affidavits as well as expert advice to the Administrator to assure the adequacy of environmental regulatory decisions involving the protection of the health and welfare of all U.S. inhabitants.

This report provides chemical data from a survey of distributed and marketed municipal sludges intended for home and commercial fertilizer use. Representative sludges were obtained from 26 cities across the country and analyzed for trace metals and organics (the consent decree priority pollutants); in addition, samples were characterized in terms of the major organic components detectable by GC/MS. The resultant data base was intended to supplement an extensive study of the occurrence of microbial pathogens in the same sludges (CR-812589), which was undertaken as an evaluation of possible potential health risk from use of such products.

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ABSTRACT

As a companion project to a study of the occurrence of pathgens in distributed and marketed (D & M) municipal sludge products, a 26 city survey of the priority pollutant metals and organics in these same sludge products was undertaken. Samples were also characterized for the major organic components present. One part of the survey involved analyses of multiple composites of weekly samples from each of eight sites in two cities where large sludge composting and marketing operations existed. A second part of the survy entailed single composite sample analyses from each of 24 cities around the United States; 15 of these facilities were actively involved in marketing and distribution programs.

Analytical methods followed standardized procedures; modifications were required in some instances in order to deal with the complicated sample matrix presented by composted sludge. In some instances, particularly for extractable organic compounds, the methods analyzed could not consistently and adequately contend with the matrix.

Of the 15 trace metals analyzed for, all but Be and Tl were detected 100% of the time in all 67 samples analyzed; Be was at low, but detectable concentrations 97% of the time, and Tl was never detected. The relative standard deviation of individual metal concentrations for each site where multiple composites were analyzed was less than 30%. However, the range of metal concentrations from site to site varied up to two orders of magnitude for some metals. Comparison of these results with literature reports of municipal sewage sludge evaluations suggested that none of the sludge products tested would be classified as hazardous waste under RCRA criteria. Comparison of the analytical data to EPA proposed criteria for D & M sludge products indicate that copper may be a problem in sludge from one city, and that several D & M products may have a consistent problem with Pb in terms of land use applications.

Relatively few of the target organic compounds were detected in any of the samples. Bis-(2-ethylhexyl)phthalate was detected in all samples; two-, three-, and four-ring PAH, phenol, chlordane, and DDT metabolites were found in several samples. Six other target compounds were detected in one sample each. The PCB mixture, Aroclor 1248, was detected in two samples, and the concentration exceeded the draft criteria level for D & M sludge products in both cases.

The GC/MS characterization of major organic components in 26 sludge extracts did not reveal any "new" compounds. There was a preponderance of compounds which probably belong to aliphatic and carboxylic acid classes; a baseline "hump" characteristic of petroleum residues was apparent in the majority of samples. A large number of GC/MS peaks were multi-component peaks, which prevented any semblance of a computer match in the NBS mass spectral library.

This study was conducted by the County Sanitation Districts of Los Angeles County, Whittier, California. This report was submitted in fulfillment of CR-812589-010 by the County Sanitation Districts of Los

Angeles County under primary sponsorship of the U.S. Environmental Protection Agency. The report covers laboratory work performed between October 1, 1986, and November 20, 1987; the report was completed as of December 18, 1987.

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Section 1

INTRODUCTION

The land application of municipal wastewater treatment sludges is widely practiced both as an economic treatment or disposal method and to provide an economic soil nutrient amendment for agricultural use. Concerns over the general disposal of sludge to land have focused on several possible adverse impacts from sludge-borne chemical and microbial agents, including phytotoxicity, domestic animal toxicity, and human health (1-5). Human health issues primarily emphasize pathogenic microorganisms (6,7), and to a lesser extent, trace metals and organics (3,8-10), which might enter the food chain via contamination of drinking water, accumulation in and on edible crops, or accumulation in animals and animal products used for food. The literature and issues on pathogens in sludge have been reviewed (6,7), and an extensive survey of organisms in stabilized sludge products distributed and marketed across the United States was recently completed (12).

The literature on chemical contaminants in sludge and associated risks of land application is by no means complete, although trace metals have been analyzed in a wide variety of sludges and wastewaters. Reviews exist which summarize much of this data, along with factors associated with possible migration of metals into water and food supplies, and the health issues arising from this potential (10,11,13-16). More recent studies have continued to focus on specific chemical and biochemical pathways of different metals in soils, plants, and animals (17-20).

In contrast to metals, relatively few sludges have been characterized in terms of specific toxic organic chemicals. Reviews (e.g., 9, 14, 21, 22) have described only a handful of compounds. Most of the information relevant to soil and groundwater mobility of organics and biochemical effects in plants and animals stems from research on pesticides and herbicides; some information also exists from studies of selected compound classes in wastewater treatment and soils (e.g., 23-29). Recently, detailed models have been presented to attempt assessment of the behavior and fate of trace organics in soil systems (30-32) utilizing chemical class and individual compound properties.

Essentially all of the referenced reports describing effects of trace chemicals in sludge applied to land have revolved around specific sludges applied under controlled, planned conditions - either laboratory, pilot, or full scale operations. Sludges used in planned land applications are usually stabilized via one or more treatments such as digestion, chemical treatment, dewatering, heat-drying, and composting.

In 1983, the EPA published its process design manual, "Land Application of Municipal Sludge" (14), setting guidelines for projects and reviewing existing information and data bases. In a separate report EPA identified approximately 50 individual metals and organics of probable concern in different disposal management options (33). These options included: landspreading and distribution/marketing (agricultural); landfilling; incineration, and; ocean disposal.

In a separate but obviously related issue, the "Domestic Sewage Study" (34) addressed concerns over the industrial disposal of toxic wastes into municipal treatment systems and the domestic sewage and sludge exclusion from RCRA. This study proposed a list of 165 chemicals for analysis in municipal treatment systems. As part of a cooperative study (35) between the Association of Municipal Sewage Agencies (AMSA) and EPA, 18 sludges were evaluated using the "Toxicity Characteristic Leaching Procedure" (TCLP). The TCLP is the EPA proposed replacement for the Extraction Procedure (EP) used for assessing whether solid wastes are hazardous based upon the leachable content of 52 toxic chemicals (36). A wide range of sludge types was included in that study, and although none exceeded the proposed TCLP limits for hazardous wastes, some were close to the proposed limits (36). The EPA is currently in the process of issuing regulations for sludge management (37).

The methods and difficulties of performing quantitative human risk assessment in land sludge application programs have been addressed (38,39). In an attempt to focus on the feasibility of such an assessment for pathogenic microorganisms in distributed and marketed sludge products, a project encompassing sludge products from 26 sites was initiated (12). As an addendum to that pathogen study, the work described herein was aimed at providing a survey of selected toxic chemicals in these same sludge products.

Specifically, the goals of this study were to:

1. provide a data base of 15 trace metals and 121 toxic organic compounds in stabilized sludge products from 26 cities which are distributed and marketed for various land application uses.

2. characterize selected sludge extracts from each city for non-target organic chemicals which might predominate in individual sludges.

Section 2

CONCLUSIONS

All of the municipal sludge products analyzed from 26 cities contained measurable levels of heavy metals; concentrations ranged over two orders of magnitude between sites. Based upon comparisons with reported evaluations of municipal sludges in the literature, it is unlikely that any of the distributed and marketed sludge products tested in this study would be classified as hazardous waste. However, in comparing measured concentrations with EPA-proposed D&M sludge criteria, copper and lead concentrations from several sites appeared to be high enough to pose a problem as far as land use of products is concerned.

Volatile priority pollutant organics were rarely detected, hence this group of compounds appears to have little significance in sludge products. Few samples contained detectable amounts of any of the extractable priority pollutant organics. Chlordane, DDT metabolites, and two-to-four-ring PAH were most frequently detected, but incidence was clearly site specific. A phthalate was detected in all 67 samples tested. A few target organics were found only once from a variety of sites; Aroclor 1248 was detected twice. Where analytical detection limits were sufficient to address the proposed D&M criteria, the only organic which exceeded these guidelines was the Aroclor. In general, the priority pollutant organics do not appear to be cause for concern in these types of products, but site-specific evaluations appear to be warranted based on the scatter of data.

No new toxic organics were identified on GC/MS characterizations of the major organic components in samples from each city. The preponderance of the materials appeared to belong to aliphatic and carboxylic acid classes of compounds. A majority of the sites contained molecular profiles suggesting a high petroleum contribution.

The molecular complexity of the sludges presented matrix problems which inhibited detection limits for the standardized extraction, cleanup, and analytical methods used. The resulting detection limits were not sufficient to address the proposed D&M sludge criteria levels for at least five of the organics on that list in the majority of samples analyzed.

Section 3

RECOMMENDATIONS

Distribution and Marketing (D & M) sludge product criteria should be finalized, and the data developed in this survey should then be reviewed.

Where existing survey data are found insufficient relative to finalized D&M critera due to analytical matrix problems, sites should be re-surveyed; appropriate modifications of existing analytical techniques must be developed to meet these goals.

Consideration should be given to site-specific monitoring programs where survey data indicate possible problems, for example, with copper, lead, and PCB concentrations.

Section 4

EXPERIMENTAL PROCEDURES

Project Design

Municipalities participating in this project were selected based on a number of criteria (12). These included the sludge treatment process employed, the geographic and climatic region, and the potential for, or existence of, a distribution program. A small number of selected facilities did not operate a distribution program but were selected because they were representative of a specific treatment process or region; others had a D & M program planned, but not in operation.

One part of this survey involved replicate composite sampling of products sampled and analyzed weekly for pathogens (12). There were eight sites in two cities where large, ongoing composting and marketing efforts were in operation. The second part of the survey entailed preparing one composite sample from each of the other 24 cities which were studied extensively in the pathogen project (12). Seventeen of the 26 facilities sampled were actively marketing or distributing some portion of the sludge product for home use.

Weekly Sampling Sites

One facility was located on the East Coast and utilized the "Beltsville" aerated static pile method of composting. Two sampling points were established at this facility. One sampling point was a "giveaway bin" where the public could obtain compost for home use. The compost placed in the giveaway bin was collected from a stockpile prior to screening and therefore still contained all of the wood chips used as a bulking agent during the composting process. The other sampling point was the final screened compost from which the larger wood chips had been removed. The screened compost was utilized through a bulk distribution program which included agricultural utilization, ballfield renovation, strip mine renovation, and a marketing program. The majority of the compost was distributed through these options. The giveaway bin represented a fairly minor portion of the total compost distributed, but that material was specifically available to the general public for uncontrolled home use.

The other facility was located in California and employed the windrow composting method. Essentially all of the compost produced at this facility was utilized by a private marketing company which used the compost as the base material for an entire line of commercial soil amendment products. The bagged products were marketed extensively through retail outlets for home garden use.

Six sampling points were initially established at the West Coast facility. The first sample was collected from the final compost produced at the regional treatment plant prior to release to one commercial producer. Depending on the time of year, one of two composting options was predominantly utilized. Wet sludge cake was mixed with sawdust as a bulking agent during the cooler periods of the year; previously dried compost was back-blended as the bulking agent during the warmer months. Although the finished compost only represented one sampling point, samples were separated based on the bulking agent used. The remaining sampling points were assigned to four commercially produced soil amendment products. Most of the time, bags of the commercial products were selected randomly from the producer's storage area. In a few cases, bags were purchased at retail outlets. The four products selected for sampling varied in final composition and accounted for the majority of the compost distributed.

Bimonthly Sampling

The second part of the survey incorporated twenty-four other municipal or regional facilities; the final sludge products were sampled bimonthly for a period of one year for microbiological testing. The participating sites represented many different sludge treatment processes including anaerobic digestion followed by dewatering and static pile composting, windrow composting or in-vessel composting. Facilities employing drying beds, preceded by either anaerobic or aerobic digestion, were also well represented, as well as two sites incorporating heat treatment processes. The participating facilities were well distributed around the continental United States.

Compost or sludge samples were collected by personnel at each participating municipality. Sampling kits were provided for each sample collected. The sampling kit included two sterile 5 inch x 14 inch Whirl-Pak bags for microbiological samples, a 1 quart glass jar with a teflon lined lid for chemistry samples, a sterile scoop, polyfoam refrigerant packs, sampling instructions, a sample collection form, and a Freeze Safe insulated mailing container.

When the sample arrived in the laboratory, sample documentation and labelling were checked, then the Whirl-Pak bag microbiology samples were stored at 4 C and the 1 qt. glass jar chemistry samples was stored in a -20 C freezer.

Compositing of Sludge Samples

Composites were made by using equal amounts (20 g) of each sample, homogenized, and stored in glass containers with teflon lined lids at -20 C.

Eight sludge samples comprise each composite from the eight weekly locations at the two major study sites. Composites from the other 24 cities (Bimonthly sites) include four sludge samples each. A total of 67 composites was made. A detailed description of these composites are given in Appendix I. Percent moisture was determined on a portion of each sample (41).

Trace Metal Analysis of Sludge Samples

Fifty gram portions of the composite samples were dried at 60 C, pulverized, and thoroughly mixed (42). Samples were prepared for different test methods and analyzed as described in ensuing sections. Spectrometers were all interfaced to a TRS-80 microcomputer system, and all raw data, reagent blank corrections, dilution factors, sample weights, and calculated data were archived on hard disk.

Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Ag, and Zn. Two to three grams of each dried sample were accurately weighed into a 250 ml Erlenmeyer flask. Fifty ml of nanopure water and 4 ml of concentrated nitric acid were added and the sample was heated on a hotplate until the volume was reduced to approximately 15 ml. The sample was then cooled and 20 ml of fresh aqua regia was added to it; the flask was fitted with an 18" reflux air condenser and the sample digested for an additional 4.5 hours on the hotplate. The sample was then removed from the hotplate, cooled and filtered into a 50 ml volumetric flask using a sintered glass filter. The volume was adjusted to 50 ml and the sample was well mixed.

A blank and a set of duplicate and spiked samples were processed for each set of ten samples.

Analyses were performed with an Instrumentation Laboratories Plasma 200 sequential inductively coupled plasma emission spectrophotometer interfaced with a TRS-80 model II microcomputer/hard disk system. The instrument was set with proper operating parameters and was calibrated according to the instrument manufacturer's recommended procedures using mixed calibration standard solutions. Before beginning the sample run, and after every two samples, the highest mixed calibration standard was reanalyzed as if it were a sample. Concentration values of the mixed standard deviated by less than 6%.

Mercury. An aliquot (0.6-1 g) of each dried sample was accurately weighed into a 250 ml Erlenmeyer flask and slurried with 100 ml of nanopure water prior to digestion as described in EPA method 245.1 (40). After completion of digestion, each sample was quantitatively transferred into a 250 ml volumetric flask. The volume was adjusted and different aliquots were subsequently used for analysis by cold vapor technique using the EPA method 245.1. A blank and a set of three standards (0.05 ug, 0.1 ug, and 0.2 ug Hg) were carried in duplicates through the whole process along with the samples. Duplicate and spiked analyses were performed for every tenth sample.

Analysis was performed with an Instrumentation Laboratories (IL) model 951 atomic absorption spectrophotometer equipped with the IL AVA (Atomic Vapor Accessory) device.

As, Se, and Sb. An aliquot (0.3-0.5 g) of each sample was accurately weighed into a 125 ml Erlenmeyer flask and the sample was digested for As, Se, and Sb analysis following the procedure outlined in Standard Methods, 16th Edition 303E (41) for the hydride generation/atomic absorption determination in wastewater. The routine procedure used in this laboratory included a modification of 303E to insure that large concentrations of transition metals such as Cd, Co, Cr, Cu, Ni, and Pb will not interfere with the hydride generation analysis of As and Se: 6.5 N HCl was used instead of the recommended 4N

HCl. After completion of digestion, each sample was quantitatively transferred into a 100 ml volumetric flask. The volume was adjusted with 6.5 N HCl and different aliquots were subsequently used for the analysis of As, Se, and Sb by the hydride generation technique. A blank and set of four standards were carried in triplicate through the whole process along with the samples. Duplicate and spiked analyses were performed for every tenth sample.

Analyses were performed with an Instrumentation Laboratories (IL) model 951 atomic absorption spectrophotometer equipped with the IL Atomic Vapor Accessory (AVA) device. Electrodeless discharge lamps were used as the light source and recommended manufacturer power settings were followed. Addition of a potassium iodide prereductant solution was required for As and Sb, but not for Se. A detailed description of the procedure used is outlined in Appendix II.

Thallium. A 0.5-1g portion of each sample was accurately weighed into a 125 ml Erlenmeyer flask and the sample was digested with HNO3 and H2O2 for the graphite analysis of Tl as described in SW 846 Method 3050 (42), using nickel nitrate as a matrix modifier. Duplicate and spiked analyses were performed for every tenth sample.

Analysis was performed with an IL Video 22 atomic absorption spectrophotometer using a Smith-Heftje background correction technique. The unit was calibrated using a 4 point standard curve.

Volatile Organic Analysis of Sludge Samples

Volatile organics analyses were performed on 40 samples. These consisted of the composites from the 24 cities (bimonthly sites) and two composites from each of the weekly sampling locations.

Five grams of each sample were accurately weighed into a 40 ml septum vial and the sample was extracted with 20 ml methanol (42). An aliquot of the extract was then analyzed by the purge and trap technique as described in the SW 846 Methods 5030, 8010, and 8020 (42) with the following exceptions.

1. The trap packing material consisted of 2/3 Tenax TA and 1/3 activated charcoal. Silica gel was omitted because the trapped water was incompatible with the use of cryofocusing on the Megabore capillary column.

2. Five minute dry purge was used to remove excess water vapor.

3. 1-chloropentane and methylcyclohexane were used as surrogate standards in addition to the recommended 1,4-Dichlorobutane.

4. A 0.53 mm x 30 m capillary column (J&W Scientific DB 624 Megabore fused silica column) was used to separate all of the compounds of interest instead of the dual packed columns prescribed by SW 846.

The detailed procedure used is outlined in Appendix III.

Pesticides and PCBs Analysis of Sludge Samples.

Sample Preparation. All 67 composites were processed according to the procedure described in the "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples" (43) for GC/ECD analysis.

GC/ECD analyses were performed with a Varian 6000 gas chromatograph equipped with dual Ni 63 electron capture detectors and dual capillary columns (0.32 mm x 30 m J&W Scientific DB-5 and DB-17 fused silica capillary columns).

Fifteen of the composites were analyzed with this technique. During the sample preparation process, the Florisil cleanup step produced separate extract fractions, each of which was mercury-treated for removal of sulfur interferences and sulfuric acid-treated for removal of organic interferences. However, since dieldrin, endrin, endrin aldehyde, methoxychlor, endosulfan I, endosulfan II, and endosulfan sulfate are totally or partially destroyed by acid treatment, each fraction was injected into the gas chromatograph twice - before, and after acid treatment. Any samples where PCBs were identified were saponified according to the procedure described by Armour and Burke (44), and reinjected.

Even after mercury and sulfuric acid treatments, the complex matrix of the extracts required further dilution of the samples, thus raising the detection limits in the range of 20-2000 ug/kg for pesticides and 200-1000 ug/kg for PCBs.

Due to these GC/EC analytical difficulties, all samples were reanalyzed by GC/MS using the Acid and Base/Neutral extracts obtained by the SW 846 Method 3540 (42).

Extractable Organics Analyses by GC/MS

Ten gram portions of compost were combined with 10 g Na2SO4 and homogenized with a Tekmar A-10 Analytical Mill; each sample mixture was placed between plugs of glass wool in a Soxhlet extraction and spiked with the appropriate surrogate and/or matrix spike mixtures. Samples were extracted for 24 hours with a 1:1 hexane:acetone mixture according to EPA Method 3540 (42). Samples and blanks were spiked with 2 mL of BNA surrogate mixture; matrix spikes were prepared by spiking two samples in every set of 10 with 2.5 mL each of matrix spike I and matrix spike II mixture (Appendix V). After Kuderna-Danish solvent reduction, concentrates were diluted to 10 mL with hexane and stored in teflon-lined screw-cap vials for further processing.

These extracts required column chromatography cleanup. A gel permeation chromatography (GPC) method using SX-3 Bio-beads (Analytical Biochemical Laboratories) was used as described in EPA Method 3640 (42). The column was a 70 cm X 15 mm packed with a 60 cm bed height of Bio-beads SX-3;

sample aliquots were introduced to the GPC system via a 2 mL loop on either a Rheodyne manual or IBM 9505 SE automated sample injector. The pump was an Altex 110A HPLC pump operated at a flow rate of 1.8 mL/min. The system calibrated daily with the GPC calibration mix (Appendix V).

The GPC-treated extracts were analyzed for the semi-volatile priority pollutant organics by GC/MS according to EPA Method 8270 (42). High resolution fused silica SE-54 capillary columns (0.25 mm X 30 m, J & W Scientific) were employed for GC separations on either a Finnigan Model 4021/INCOS GC/MS/DS or a Hewlet-Packard Model 5970 MSD GC/MS/DS. Standardization, calibration, and operation details are in Appendix IV).

Quality Assurance

Metals

A set of four replicate standards, containing the metals at the concentration levels listed in Appendix VI, was processed and analyzed according to the procedures described above for metals. Appendix VI describes the accuracy and precision obtained with these methods. EPA performance criteria were met, and routine precision and accuracy data are considered good for sludges.

In order to investigate high Cu results obtained by ICP for sample series 28070-74, and determine if results were subject to spectral interferences, those samples were reanalyzed by atomic absorption spectroscopy. The variation between the ICP and AA results ranged between 0.7% to 7%. Further substantiation of the absence of matrix interference on these samples was obtained by the method of standard additions: a four point curve was used for sample 28070. The Cu result obtained was 6% higher than the ICP result (1190 vs. 1122 mg/kg).

Volatile Organics

A set of four replicate standards containing the volatile halocarbons and aromatics at the concentration listed in Appendix VI were processed and analyzed according to the procedure described above. Accuracy and precision data obtained with this method are summarized in Appendix VI along with routine results of duplicate and spiked analyses performed on different samples.

Extractable Organics

The GC/MS systems were tuned daily to meet standard mass spectral ion abundance criteria for DFTPP as established by the Environmental Protection Agency (42). Documentation of the tune was provided in the form of a bar graph and a mass list.

A calibration standard including: each analyte; the six recommended internal standards; and the six recommended surrogate standards, were analyzed for each 12-hour period. The standard was used to evaluate retention times and response. Other quality control checks applied to the calibration standard appear in Appendix IV.

A reagent blank was run for every ten samples. The blanks were carried through through all stages of sample preparation and measurement to demonstrate freedom from interferences of the analytical system, glassware, and reagents. Each lot of solvent was screened by gas chromatography for contaminants.

A matrix spike and matrix spike duplicate (Matrix Spike I and II, Appendix V) were analyzed for every ten samples. The percent recovery range was evaluated for acceptance and accuracy, and the duplicates for reproducibility.

The percent recovery ranges for surrogate standards in all blanks, spikes, and each sample are also tabulated in Appendix VI.

Surrogate spike recoveries for samples analyzed on the Hewlett Packard system were, as a group, lower than those obtained for samples analyzed on the Finnigan (Appendix VI). Since samples from these two "groups" were spiked and extracted in common analytical sets, a systematic error at this stage is unlikely. The Finnigan was used for all samples in the 24 city survey, while the HP was used for the weekly California and Pennsylvania operations. It is postulated at this point that the sample matrices in the weekly samples, which were very complex and dominated by petroleum or other hydrocarbon sources, may have interfered with ionization efficiency due to source design in the HP system. This possibility is currently being evaluated further.

Section 5

RESULTS

Metal concentrations for the composites from the 24 bimonthly monitoring sites are presented in Table 1; Tables 2 and 3 contain metals data for composites of sludge products from the weekly monitoring sites in Regions IX and III, respectively. Percent moisture values for all samples are also presented in these tables; the metals data are shown on an "as-received" basis for comparison of the levels in the distribution and marketing sludge products.

Analytical results for target volatile organic compounds in all samples are tabulated in Appendix VII. The GC/EC results for pesticides and PCBs in 15 samples are included in Appendix VIII. The GC/MS results for pesticides, PCBs, and the remainder of the solvent extractable target organics are presented in Appendix IX. Summary tables for the target organics detected in these samples are presented in the Discussion Section.

The results of the GC/MS computer characterization of sludge composite extracts from each of the 26 sites for non-target organic compounds are presented in Tabular form in the Discussion; Appendix X includes the total ion chromatograms from each of the 26 cities.

Section 6

DISCUSSION

Metals

All metals except Be and Tl were detected 100% of the time in all 67 D & M sludge samples; Be was low, but above detection limits in 97% of the samples, while Tl was not ever detected. These results are consistent with the frequency of detection of 12 metals reported in EPA and other surveys of various types of sludges from over 100 POTWs around the country (45).

Comparison of the compositional data in Tables 1-3 shows a wide fluctuation in the concentrations of individual metals in D & M products. With the exception of mercury, which only showed a 7-fold range, metal concentrations varied between one and two orders of magnitude; the ranges fall within these bounds regardless of whether data are compared on an "as is" basis or normalized to a dry weight basis. More than 90 percent of the Sb, As, Ba, Be, Cu, Mn, Hg, Ag, and Zn measurements were within one order of magnitude of the lowest values reported; for Cd, Cr, Pb, Ni, and Se, over 50 percent of the values were more than one order of magnitude above the lowest values detected. Although there were wide differences among the 26 sites, the individual D & M products appeared to be more consistent based upon the replicate analyses from the weekly sites. For example, Table 4 summarizes the average metal concentrations in composites of eight different D & M products from the weekly sampling sites in Regions III and IX. The relative standard deviations for individual metals (dry weight basis) in each of these is generally less than 30 percent. Comparison of the "as is" (wet weight) compositional data in Tables 1-3 with the proposed (TCLP) hazardous waste regulatory levels for metals (36) suggest that none of the D & M products would be classified as hazardous waste if they had been evaluated by this extraction technique. Although TCLP analysis was outside the scope of this survey, the results can be estimated. Table 5 summarizes the minimum compositional level (which would have to be 100% extractable in the TCLP text) necessary for each metal in order for a sample to exceed the proposed regulatory level, the percentage of samples meeting that level, the empirical worst case ratio of TCLP-extractable metal and compositional metal concentrations reported for sludge (35), and the percentage of samples projected to exceed the proposed regulatory levels based on this TCLP extraction factor. Even if the sludges with the highest TCLP-regulated metal compositions had as great of a percentage of extractable metals as reported for other municipal sludges in the literature (35), they would not be classified as hazardous, *per se*.

However, the TCLP was not designed specifically to evaluate the suitability of a waste to be used as an agricultural soil amendment but rather to assess possible impact on groundwater if disposed of in a mismanaged municipal landfill scenario. Implicit in the discussion of Distributed and Marketed Sludge products is their use in productive land application scenarios rather than "disposal" of the materials at a dedicated site. The effects of sludge-bound metals on groundwater,

Table 1

METAL CONCENTRATIONS FOR THE BIMONTHLY SAMPLE SITES
(mg/Kg Wet Weight)

SAMPLE NUMBER	PERCENT MOISTURE	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Se	Ag	Tl	Zn
28046	31.8	1.2	3.6	99.6	0.38	8.43	117	484	157	173	0.55	49.8	2.4	27.1	<0.22	630
28047	23.2	2.0	16	158	0.94	11.6	285	1200	287	166	2.39	138	4.2	109	<0.23	1240
28048	50.4	0.52	0.83	106	0.30	1.09	31.6	336	54.6	167	1.04	20.0	0.76	24.4	<0.11	167
28049	38.4	1.0	2.1	143	0.19	11.3	70.3	202	104	205	1.48	26.2	2.6	20.8	<0.34	439
28050	29.9	3.1	2.9	51.5	0.39	11.0	191	447	215	256	3.70	50.1	10	55.7	<0.16	793
28051	53.8	0.65	1.5	161	0.15	0.60	5.9	67.8	29.5	110	1.11	5.40	0.55	10.8	<0.26	130
28052	55.9	1.9	7.1	239	0.61	3.90	47.0	232	1260	393	1.00	19.1	3.0	9.33	<0.21	787
28053	41.8	2.5	1.2	121	0.12	0.92	10.8	178	27.2	118	0.29	4.60	0.67	9.08	<0.12	202
28054	35.1	1.7	1.5	118	0.73	3.2	63.5	142	76.4	483	0.52	9.30	1.0	18.4	<0.23	209
28055	34.3	0.70	2.4	135	0.51	2.14	44.2	230	72.9	332	0.89	8.00	1.3	5.66	<0.22	506
28056	66.4	0.52	3.5	70.0	0.16	0.65	11.7	50.3	77.5	144	0.43	9.10	0.46	3.84	<0.16	99.8
30963	81.4	0.48	0.78	143	<0.10	2.68	211	152	23.4	8.90	0.70	6.82	1.1	52.2	<0.10	238
30964	39.5	2.7	4.6	330	0.15	5.84	60.6	241	49.7	184	0.56	12.6	6.3	14.5	<0.25	562
30965	11.9	5.2	10	619	0.42	20.3	559	1308	418	159	2.97	334	4.3	174	<0.44	1915
30966	57.1	2.1	2.1	128	0.11	10.3	104	204	119	134	1.31	37.7	0.94	26.0	<0.21	453
30967	77.1	0.98	1.1	75.6	<0.10	2.96	26.4	66.1	14.2	5.79	0.16	14.2	0.56	11.4	<0.11	126
30968	2.8	3.6	3.3	509	0.24	14.0	60.5	295	107	530	1.94	100	2.6	49.0	<0.40	1186
30969	37.1	0.99	2.7	320	0.47	9.56	74.5	262	44.0	972	1.92	12.1	1.6	26.4	<0.26	369
30970	44.2	3.6	6.8	369	0.13	6.1	37.9	288	138	93.6	3.26	11.3	3.8	30.4	<0.22	591
30971	42.8	1.8	2.4	66.0	0.26	5.93	31.6	299	34.6	556	0.68	13.5	2.3	25.6	<0.28	560
30972	70.8	1.0	2.6	70.6	0.22	5.40	92.4	47.1	3.77	146	0.21	9.17	0.36	4.2	<0.12	222
30973	44.3	2.2	4.2	346	0.32	9.02	295	157	165	891	0.62	15.0	2.9	45.8	<0.22	430
30974	34.3	1.5	6.0	325	0.31	38.5	529	198	105	143	0.80	73.0	3.9	29.0	<0.28	643
32462	50.1	1.0	2.3	133	4.42	4.16	13.7	98.9	54.1	352	0.54	9.6	0.83	7.6	<0.24	173

Table 2

METAL CONCENTRATIONS FOR THE WEEKLY CALIFORNIA SITES
(mg/Kg Wet Weight)

SAMPLE NUMBER	PERCENT MOISTURE	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Se	Ag	Tl	Zn
28065	57.2	3.3	4.4	83.8	0.13	16.5	155	188	129	63.8	1.04	61.1	3.4	20.5	<0.24	522
28066	55.8	3.6	4.1	76.8	0.14	18.6	189	244	154	80.5	0.73	78.5	3.4	24.1	<0.22	633
28067	44.8	3.8	5.7	98.1	0.12	15.9	157	224	146	70.5	1.47	66.4	4.4	22.2	<0.24	559
28068	38.0	3.8	9.0	93.5	0.16	17.4	218	270	180	91.1	1.25	71.5	6.1	18.1	<0.14	628
28069	39.5	4.3	9.8	71.3	0.27	29.6	343	415	250	122	1.60	127	7.4	26.0	<0.17	1025
28070	32.1	6.0	18	116	0.32	27.7	437	1122	259	152	1.31	245	6.2	55.8	<0.23	1109
28071	29.1	2.9	16	114	0.32	24.5	405	1240	266	154	0.98	274	4.2	64.7	<0.24	955
28072	25.6	3.8	16	100	0.31	21.4	380	1200	254	155	2.04	231	5.3	58.5	<0.60	947
28073	22.2	2.2	16	105	0.33	21.3	425	1430	241	191	1.89	280	3.8	73.4	<0.58	1080
28074	26.0	2.8	15	97.0	0.31	23.4	420	1280	265	180	1.06	248	5.4	63.8	<0.65	1030
28075	42.6	3.3	4.4	71.9	0.16	13.2	158	198	120	149	0.72	68.6	3.4	10.5	<0.36	469
28076	43.7	2.0	3.6	400	0.19	11.6	131	259	106	162	0.64	66.1	2.7	12.8	<0.59	454
28077	43.6	1.1	3.6	77.8	0.13	12.0	121	183	95.5	144	1.01	54.9	2.8	10.6	<0.38	466
28078	45.9	4.0	6.3	90.9	0.18	16.0	185	449	141	182	1.19	100	4.1	22.9	<0.58	663
28079	46.1	3.6	4.4	83.6	0.11	13.3	127	169	90.8	76.8	0.85	56.9	3.1	14.7	<0.42	468
28080	49.2	2.9	4.6	74.6	0.10	11.6	127	194	82.2	67.7	0.92	55.3	3.3	14.9	<0.54	417
28081	43.9	3.9	5.1	61.0	0.12	14.6	152	254	129	73.6	1.40	63.7	4.7	22.0	<0.51	608
28082	38.2	4.3	8.9	46.1	0.17	19.4	257	337	176	106	1.54	78.7	6.1	24.1	<0.54	769
28083	39.1	3.8	7.6	44.2	0.20	20.1	219	314	172	97.4	1.86	74.9	6.5	21.6	<0.50	770
28084	32.5	3.9	6.8	42.5	0.18	15.2	182	242	119	110	0.97	79.8	3.4	16.2	<0.57	580
28085	36.7	2.5	5.1	107	0.18	13.4	160	315	120	123	1.02	77.1	5.0	31.2	<0.22	516
28086	41.2	2.8	4.4	127	0.11	16.1	152	267	117	101	1.14	65.7	3.1	16.7	<0.55	480
28087	33.5	3.6	7.1	66.1	0.20	18.4	210	456	169	120	1.49	99.7	3.8	26.5	<0.53	716
30951	48.1	6.0	7.1	120	0.11	11.6	175	232	118	74.5	1.20	67.3	4.5	19.3	<0.25	557
30952	46.3	5.9	8.8	101	0.13	26.0	267	341	115	108	1.49	92.6	7.5	27.6	<0.22	842
30957	43.7	6.7	12	88.6	0.30	25.6	309	387	200	116	1.77	118	8.6	28.7	<0.28	994
30958	36.7	2.8	6.5	392	0.16	12.6	156	372	120	148	0.98	73.9	3.4	36.1	<0.24	554
30959	36.5	3.2	5.3	432	0.14	14.5	175	333	138	186	1.02	72.8	4.4	33.4	<0.29	577
30960	44.2	4.2	7.6	160	0.14	15.8	206	275	145	88.0	1.16	74.6	8.5	34.9	<0.28	659
30961	33.4	4.9	8.5	500	0.16	16.5	173	298	144	112	1.19	76.4	5.6	33.2	<0.31	638
30962	40.8	3.8	7.1	422	0.15	11.8	132	203	109	85.6	1.25	56.9	6.2	24.2	<0.31	522

Table 3

METAL CONCENTRATIONS FOR THE WEEKLY PENNSYLVANIA SAMPLE SITES
(mg/Kg Wet Weight)

SAMPLE NUMBER	PERCENT MOISTURE	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Se	Ag	Tl	Zn
28057	33.8	7.6	6.2	212	0.13	4.04	65.4	285	114	206	0.71	24.9	1.6	17.9	<0.23	458
28058	47.5	1.3	2.4	175	0.16	3.00	46.8	215	95.2	147	0.52	17.1	0.86	13.1	<0.23	358
28059	34.2	4.8	5.7	298	0.28	4.87	87.7	354	179	270	1.03	27.3	1.7	22.2	<0.23	605
28060	23.1	5.7	7.8	357	0.36	5.57	120	367	243	331	1.30	28.7	2.2	26.4	<0.25	686
28061	45.3	4.0	3.8	274	0.24	4.55	83.7	295	150	255	0.68	25.5	1.2	27.8	<0.21	549
28062	40.7	4.0	3.2	233	0.16	3.69	62.3	261	116	200	0.84	21.5	1.4	16.7	<0.24	437
28063	32.3	4.2	5.1	104	0.38	6.32	122	406	242	379	1.18	32.7	1.5	30.7	<0.19	762
28064	35.9	4.0	5.4	251	0.41	6.22	127	409	554	334	0.76	31.2	1.5	35.6	<0.24	780
30953	41.0	4.8	5.5	276	0.31	4.79	119	376	200	269	1.04	31.6	1.6	29.9	<0.60	722
30954	49.2	4.9	3.9	252	0.26	4.68	85.3	292	141	223	0.80	24.0	1.3	21.3	<0.60	549
30955	29.3	4.8	3.9	259	0.19	4.26	77.0	298	138	222	0.97	22.6	1.5	20.1	<0.60	548
30956	16.3	5.7	3.6	299	0.18	5.01	86.6	393	153	268	1.25	28.8	1.6	24.7	<0.60	651

Table 4

Average Metal Concentrations and Standard Deviations for Eight D&M Products from Regions III and IX

(mg/Kg Dry Weight)

Site N	Percent Moisture σ	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Se	Ag	Tl	Zn
III-B-1 6	30.7 10.7	6.8 2.7	7.0 2.7	375 65	0.31 0.11	6.28 0.82	113 26	448 52	216 62	338 65	1.33 0.27	35.2 4.3	2.2 0.5	42.4 20.0	<0.81 0.00	773 104
III-B-2 6	40.7 6.1	7.2 1.2	7.4 1.2	393 125	0.49 0.13	8.34 1.26	165 34	561 70	380 244	465 79	1.46 0.22	45.9 5.1	2.3 0.1	65.6 42.8	<0.81 0.00	1046 171
IX-A-1 5	48.8 7.9	8.0 1.9	11.0 2.0	184 26	0.26 0.05	31.8 8.4	349 54	451 58	284 49	148 21	2.19 0.39	136 26	8.3 0.8	41.4 10.0	<0.81 0.00	1139 186
IX-A-2 2	42.9 4.8	9.4 2.0	17.0 3.0	146 40	0.34 0.15	46.9 2.9	513 77	635 72	305 153	194 12	2.60 0.06	185 36	13.0 1.0	45.2 3.0	<0.81 0.00	1570 176
IX-A-3 6	29.8 7.6	4.9 2.3	22.0 2.0	146 16	0.44 0.03	34.2 6.2	558 50	1537 447	349 27	222 21	2.10 0.65	320 67	6.9 1.7	85.2 6.5	<0.81 0.00	1445 153
IX-A-4 6	41.5 3.9	4.7 2.0	9.0 2.6	394 227	0.27 0.06	22.4 3.8	259 46	500 183	201 33	272 39	1.56 0.39	123 31	5.8 1.1	34.2 16.1	<0.81 0.00	891 164
IX-A-5 6	43.4 4.2	6.5 0.6	10.0 2.0	137 71	0.24 0.06	27.3 4.0	312 71	444 85	228 53	147 16	2.22 0.55	117 9	9.1 3.3	38.0 10.8	<0.81 0.00	1061 185
IX-A-6 6	36.5 3.9	5.4 1.0	9.9 1.7	318 286	0.25 0.04	23.4 3.6	257 36	455 130	199 30	167 21	1.74 0.39	116 20	6.9 1.9	42.1 15.5	<0.81 0.00	880 102

Table 5

Projection of Samples Having Hazardous Waste Levels of Metals

Metal	Minimum* Compositional Level, MG/KG	Percent Samples Exceeding Comp Level	Empirical** Ratio TCLP/COMP	Projected % Samples ≥ TCLP Regulatory Levels***
As	50	0	0.01	0
Ba	1000	0	0.009	0
Cd	10	55	0.004	0
Cr	50	82	0.0005	0
Pb	50	88	0.002	0
Se	10	1	0.0007	0
Ag	50	12	0.05	0
Hg	2	7	0.0002	0

---

*Proposed TCLP regulatory level of extractable metal (mg/L) (ref. 36) multiplied by a factor of 10 (the ratio of liquid to solid in the TCLP), assuming a density of 1 g/mL for the filtrate analyzed.

**Reference 35.

***Number of samples projected to have at least one TCLP extractable metal concentration greater than the proposed regulatory level (ref. 36).

crops, livestock, and ultimately human health, when used as soil amendment are the primary issues of concern for these products.

Relative to landfilling, soil incorporation of sludge should result in immobilization of heavy metals (10). Therefore, even if the acid extraction conditions of the TCLP and the resultant drinking-water-based proposed TCLP regulatory levels are used as a "worst case" model for estimating mobility of sludge bound metals to groundwater from agricultural use of these D & M products, the potential for groundwater use degradation from leachable metals appears to be low for the samples analyzed in this project.

From the standpoint of mobilization of sludge-bound metals into the human food chain via plant and animal uptake, Cd, Pb, Ni, Cu, Zn, As, Se, and Mo appear to cause the greatest concern to different researchers (e.g., 2, 8, 11, 13).

Experiments with cattle have failed to demonstrate significant uptake of Cd, Zn, Cu, Ni, or Pb from feed dosed with dry sludge (11). However, the bioavailability of Cd taken up in crops to animals feeding on them is well documented (13). Several metals, including Cd, Zn, Cu, Ni, and Mo, have been shown to concentrate in food crops when sludge was applied under various controlled conditions (18-20). Because of phytoxic effects, plants have been considered as a "barrier" between transfer of several metals in sludge to the human food chain (13). Cadmium in particular, however, is an exception, and has shown the ability to migrate in soils and plants (13,17), and to pose unique problems in terms of animal and human health (8, 13).

Discussion and guidelines for the management of the land application of wastewater sludges usually are separated into consideration of specific scenarios (14, 33, 38, 46); D & M sludge products constitute a means of land application having the least potential for management control, and, therefore, the assumptions, factors, and complex mechanisms controlling sludge metal migration and risk estimates have a somewhat greater margin of uncertainty compared to more controlled applications. As a result, it should be expected that D & M sludge metal guidelines will be somewhat more restrictive than other modes of land use. In the absence of promulgated rules and delineation of the technical criteria adopted in their developments, however, it is difficult to quantitatively assess the composites surveyed in this study with regards to the regulatory significance of their metals content. Various criteria have been suggested over the past decade (8,47-48), while the current draft D & M sludge criteria (49) have not yet been adopted. In comparing metals data generated in this study to the current draft criteria (49) three metals warrant some discussion; Cd, Cu, and Pb.

Figures 1-3 compare the "as-is" concentrations of these three metals to the draft criteria levels. For Cd (Fig 1), which is the concensus main potential health threat, none of the D & M sludge products approach the draft criteria limit of 70 mg/kg (regardless of evaluation on an "as is" or on dry weight basis). For Cu, two products from bimonthly sites in Region IX (IX-D-2 and IX-12-3) and one product from one of the weekly sites in Region IX (IX-A-3) exceed the draft

Figure 1

Cadmium Results For Compost Samples From 26 Cities

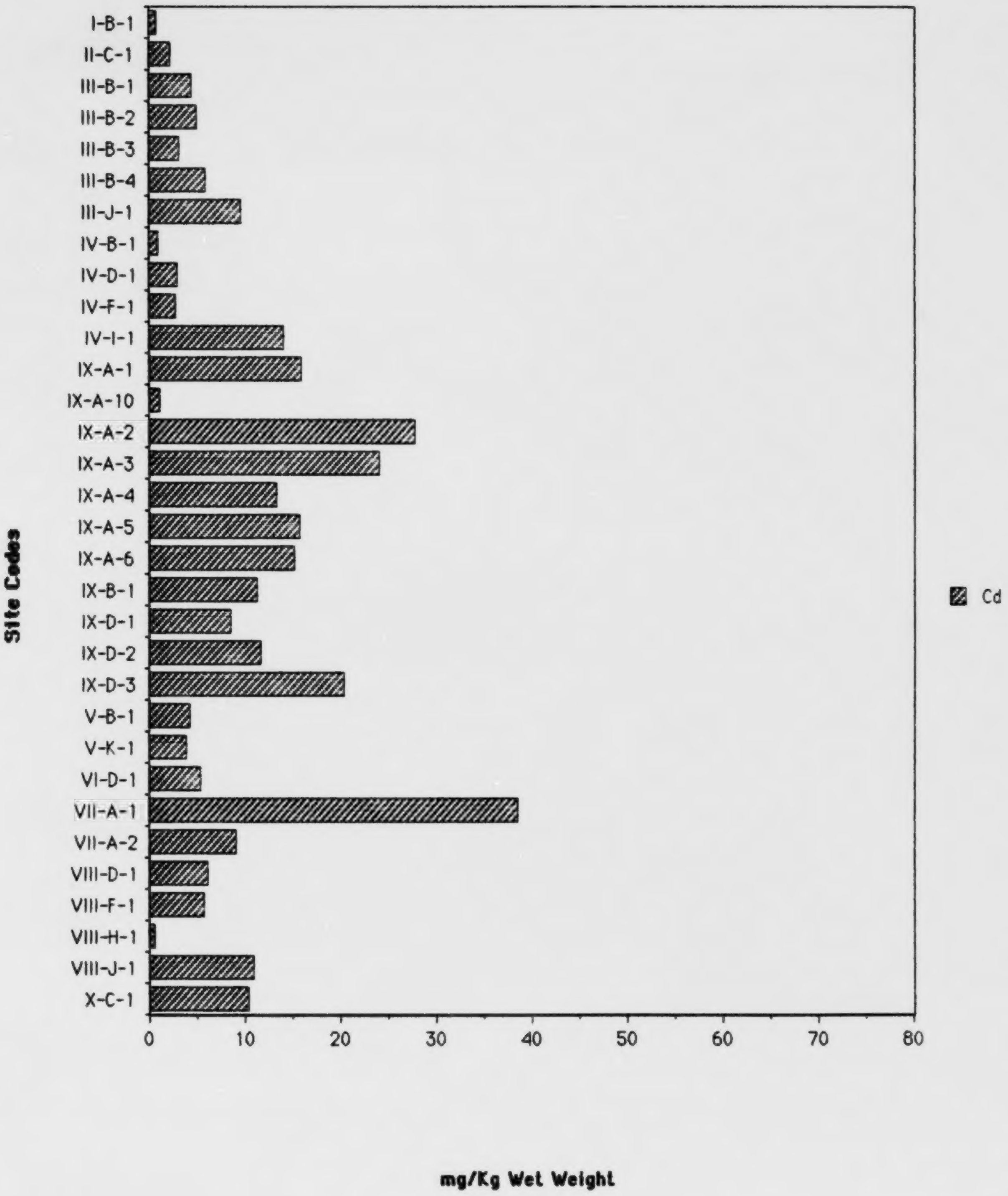


Figure 2

Copper Results For Compost Samples From 26 Cities

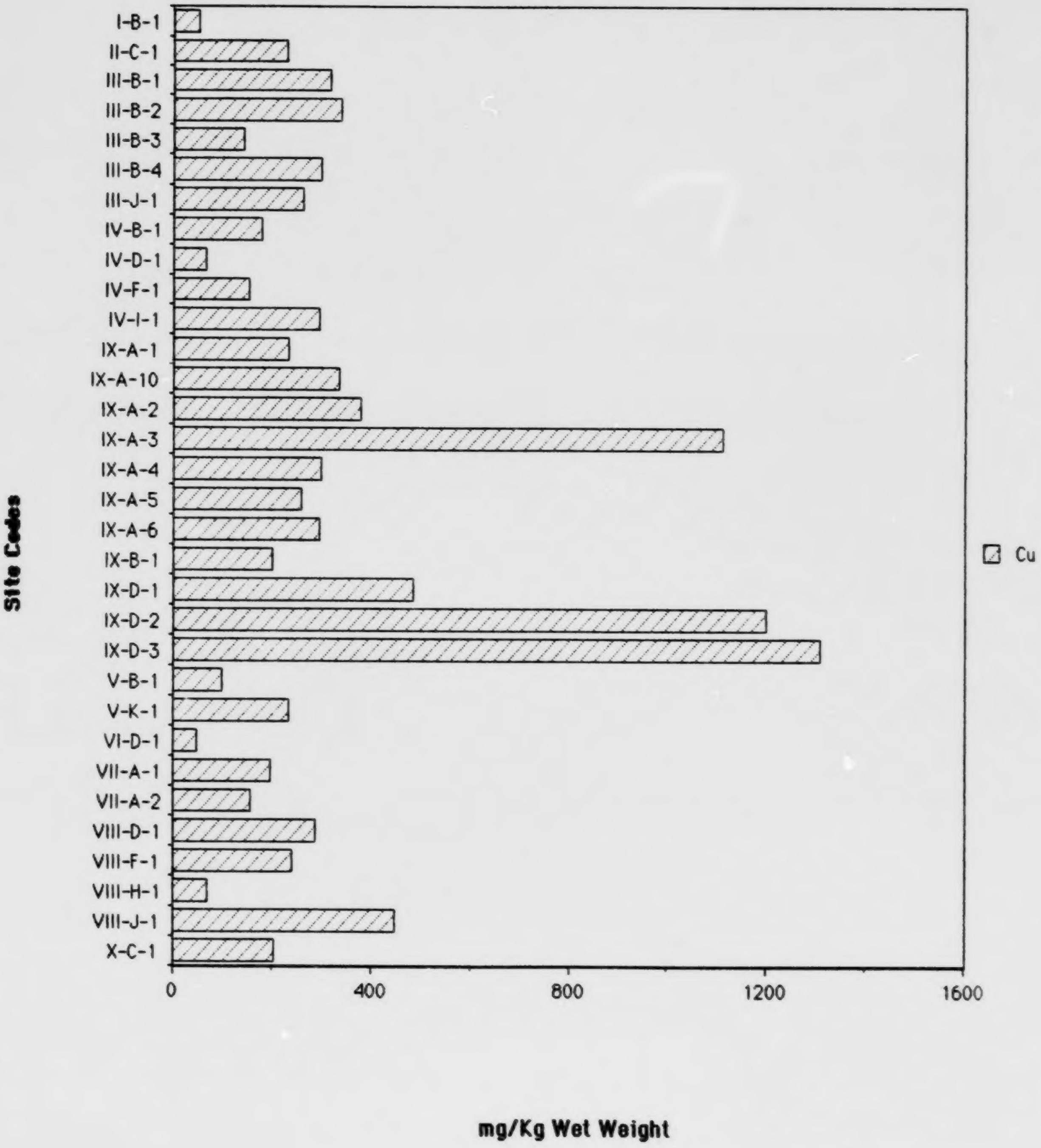
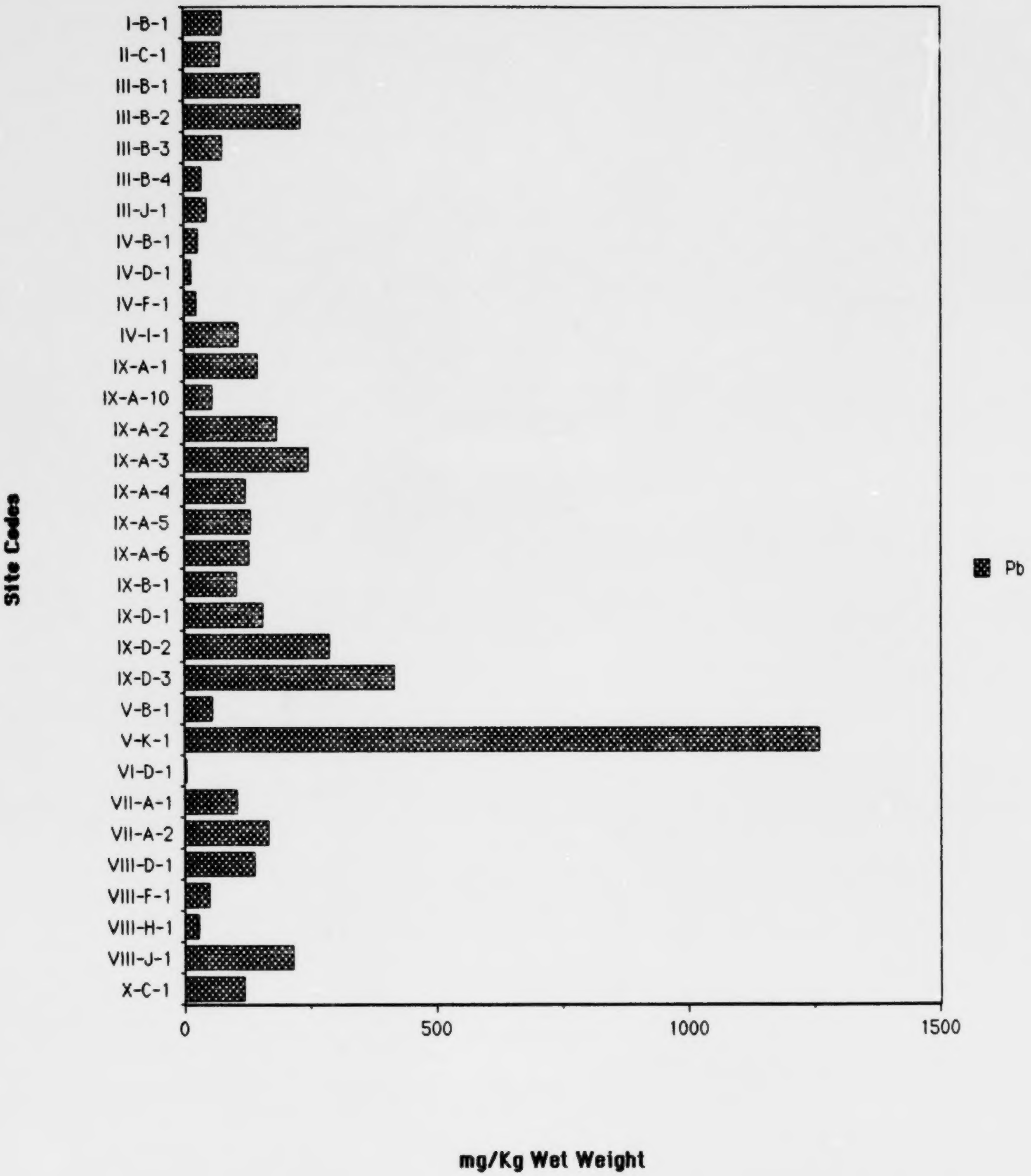


Figure 3

Lead Results For Compost Samples From 26 Cities



criteria. Sites IX-D-2 and IX-D-3 are in one city, and IX-A-3 is in a different city. However it was learned that the commercial product distributor for IX-A-3 was acquiring sludge from the IX-D-2/D-3 city during the study period and incorporating it into this particular D & M product. Analytical raw data were reviewed for these samples, as were sampling, compositing, and laboratory processing; this review along with spiking and re-analysis (see QA Section) failed to support analytical problems. Therefore, it is quite likely that the high Cu values in the materials reflect the D & M product operational factors rather than sample handling or analysis problems.

Figure 3 suggests that Pb may present more of a general problem for D & M sludge products than Cd or any other metal. Composite (bimonthly sites) and average composite (weekly sites) values for five products exceeded the draft criteria (200 mg/kg, ref 49) on an "as-is" basis; review of data in Tables 1-3 show that a total of 13 individual composites exceeded the proposed limit. Since each of these composites was made up of six to eight discrete samples from the respective sites, the Pb level would appear to be a consistent problem. If future regulations are imposed on a dry weight basis for some reason, the problem extends to at least 14 D & M products.

For a fourth metal, molybdemum, no data were developed in this study since it was not included on the contract list. In reviewing a literature summary (45), the weighted average concentration of Mo in sludge was 8.3 mg/kg, or about 40 times lower than the draft criteria value for MO (49).

Volatile Organics

Review of analytical test results for all sample sites (Appendix III) shows very few detectable target compounds. Toluene was detected at 86 ug/kg in one sample, and p-dichlorobenzene at 110 ug/kg in another. Although it is conceivable that some components may have been lost during shipping, storage, and compositing in the laboratory, it is more likely that the field composting operations are responsible for reduction of volatile components below detection limits. Volatile organics in the compound classes represented here would not appear to pose a problem to groundwater or food chain via D & M sludge use.

Extractable Organics

Pesticides. Fifteen samples from ten sites were analyzed for the priority pollutant pesticides by gas chromatography/electron capture detection (GC/EC). The amount of interfering substances caused poor detection limits, and made qualitative identification extremely difficult even though dual capillary column chromatography and several different cleanup methods were used. The remainder of the pesticide survey was completed by GC/MS. Review of the GC/EC data for the ten sites (Appendix VII) shows few pesticides in the D & M products. Table 6 summarizes these results; DDT metabolites and chlordane constituents were found most frequently, while heptachlor was detected once. The values reported for these 15 samples were too low to be confirmed by the GC/MS methods used (see Appendix VIII). The DDTs were

Table 6

Summary of Pesticides Detected in Samples from Ten Sites by GC/EC

Region-I.D. Code	Compound	Concentration (range) (ug/kg)
IX-A-1	p,p'DDE	36-59
	p,p'DDD	<20-25
	trans-chlordane	23-31
	trans-nonachlor	<20-20
IX-A-2	p,p'-DDE	107
	p,p'-DDD	39
	trans-chlordane	51
	trans-nonachlor	34
IX-A-3	p,p'-DDE	47-95
	p,p'-DDD	<20-25
	trans-chlordane	<20-43
V-K-1	p,p'-DDE	53
	trans-chlordane	52
IX-B-1	p,p'-DDE	72
	Heptachlor	54
IX-D-1	p,p'-DDE	83
	p,p'-DDD	16
IX-A-10	p,p'-DDE	22
IX-D-2	p,p'-DDE	84

more than 30 times below draft criteria for D & M sludge (49), heptachlor 20 times lower, and chlordanes were 10 times lower. The GC/EC detection limits in these sample matrices and the sample cleanup methods used were not sufficient to insure that toxaphene was below the draft criteria (1.25 mg/kg vs. about 2 mg/kg). The GC/MS detection limits for pesticides (Appendix IX) were not as low as those for GC/EC, and were sufficient to address the draft criteria only for DDE, DDD, and lindane. Since the analyses were completed prior to availability of the draft criteria, no further efforts were made to tailor an analytical protocol aimed at achieving detection limits commensurate with the proposal limits. Only one sample analyzed by GC/MS (III-B-1) had a detectable amount of a pesticide, p,p^1-DDT. The concentration, 1.1 mg/kg was about four times below the draft criteria (49).

Polychlorinated Biphenyls (PCB). PCB (Aroclor 1248) was detected in two samples by GC/EC, at 250 and 850 ug/kg. Both exceeded the draft criteria of 183 ug/kg (49). Sample matrix hampered GC/EC qualitative identification as described for pesticides, and GC/MS sensitivity was not sufficient to verify these two results. PCBs were not detected in any of the samples analyzed by GC/MS.

Other Target Organics

Twenty-four City Survey

Table 7 contains a summary of the priority pollutant organics detected in extracts of the compost composites from the 24 bimonthly sites. Only three of the target compounds were detected; bis-(2-ethylhexyl)phthalate was detected in every sample (but not in blanks), and two other compounds were detected in one samples each. None of the compounds in Table 7 are contained in the draft criteria for D & M Sludges.

Weekly Sampling Site Monitoring

Five to six samples of each compost or bagged product from the weekly sites in Pennsylvania and California were analyzed by GC/MS. Table 8 summarizes the compounds found, the concentration range, and the number of times detected. The organic matrix in the samples from the California operation was consistently quite complex even after GPC cleanup; the extraction/cleanup methods used were not sufficient to allow better detection limits for target compounds via increased concentration of the extracts. In terms of the compounds in the draft criteria, then, the methods could not effectively address benzo(a)pyrene at the proposed criteria level of 0.122 mg/kg. In view of the data which show the presence of several detectable PAH (Table 8), a better means of consistently analyzing these samples for sub-mg/L concentrations of target organics seems desirable.

The presence of low level PAH in composted sludge in the Region IX weekly sites is consistent with studies of effluent solids (50) and sludge (51) from this location. In the former study, the petroleum fuel origin of these compounds was supported. In the latter report, the two

Table 7

Summary of Extractable Priority Pollutant Organics Found in 24 City Survey

Compound	Location Code	Concentration Range, ug/kg
Naphthalene	VI-D-1	430
Phenol	II-C-1	5,900
bis-(2-ethylhexyl)-phthalate	I-B-1; II-C-1; III-B-3; III-B-4; III-J-1; IV-B-1; IV-D-1; IV-F-1; IV-I-1; V-B-1; V-K-1; VI-D-1; III-A-1; VII-A-2; VIII-D-1; VIII-F-1; VIII-H-1; VIII-J-1; IX-A-10; IX-B-1; IX-D-1; IX-D-2; IX-D-3; X-C-1	1,900-273,000

and three-ring PAH characteristic of petroleum, and similar to those patterns found in the effluent (50) were the predominate PAH detected in the sludge; after composting, these suites of compounds were not detectable with the methods employed (51). Effluent solids from this POTW had an average benzo(a)pyrene concentration of 0.015 ug/L, which represented about 0.5% of the total PAH detected (50). Comparing this information to the concentration ranges in Table 8 suggests that benzo(a)pyrene concentrations in sludge products from this site should be well below the draft criteria level (49).

GC/MS Characterization of Major Organic Components

Extracts from 24 bimonthly site composites, an extract of one composite of the composted sludge (sample IX-A-1) used in the commercial D & M products produced at the weekly sites in California and an extract of a composite of the screened product from the weekly site in Pennsylvania were evaluated by GC/MS to characterize "major" organic components. Many of the samples were relatively "clean" after gel permeation chromatography clean-up, while others contained a significant amount of organic materials; Appendix X exhibits total ion chromatograms (TIC) of these samples. The strategy for characterization was as follows. For the "clean" samples, all unknowns with TIC peaks equal to or greater than 50% of the nearest internal standard were compared to the NBS library for best fit and purity. For the more complex samples, the list compiled from the "clean" samples was searched, and all peaks equal to or greater than the nearest internal standard were compared to the NBS library. Table 9 contains a summary of these findings; and Appendix X contains more detailed criteria for the search routine.

No compounds were identified by this routine, but a compound class could be tentatively assigned to many components. Most appeared to be aliphatics and carboxylic acids, although as shown in Table 9, several could not be classed. Many were found in more than one sample.

As implied earlier, the California site samples showed a pronounced influence from petroleum products. Figure 4 compares a total ion current profile and a selected ion current profile (for m/z 57, 71) for a typical sample extract from this site. The selected ions are a characteristic hydrocarbon fragments, and organics containing them can be seen dictating the chromatograms. This chromatographic hump is typical in several other TICs from from other cities (Appendix X), although other major components were also present as summarized in Table 9.

These efforts to characterize the molecular make-up of major components in these samples did not yield any remarkable compounds; the petroleum and fatty acid type components were not unexpected. A search for other kinds of organics which now are "lost" in the large matrix would require much more treatment prior to further GC/MS analyses.

Matrix Effects and Detectability

Figure 4

Total Ion and extracted ion (m/z 57,71) chromatograms of extract of IX-A-6 showing high hydrocarbon contribution.

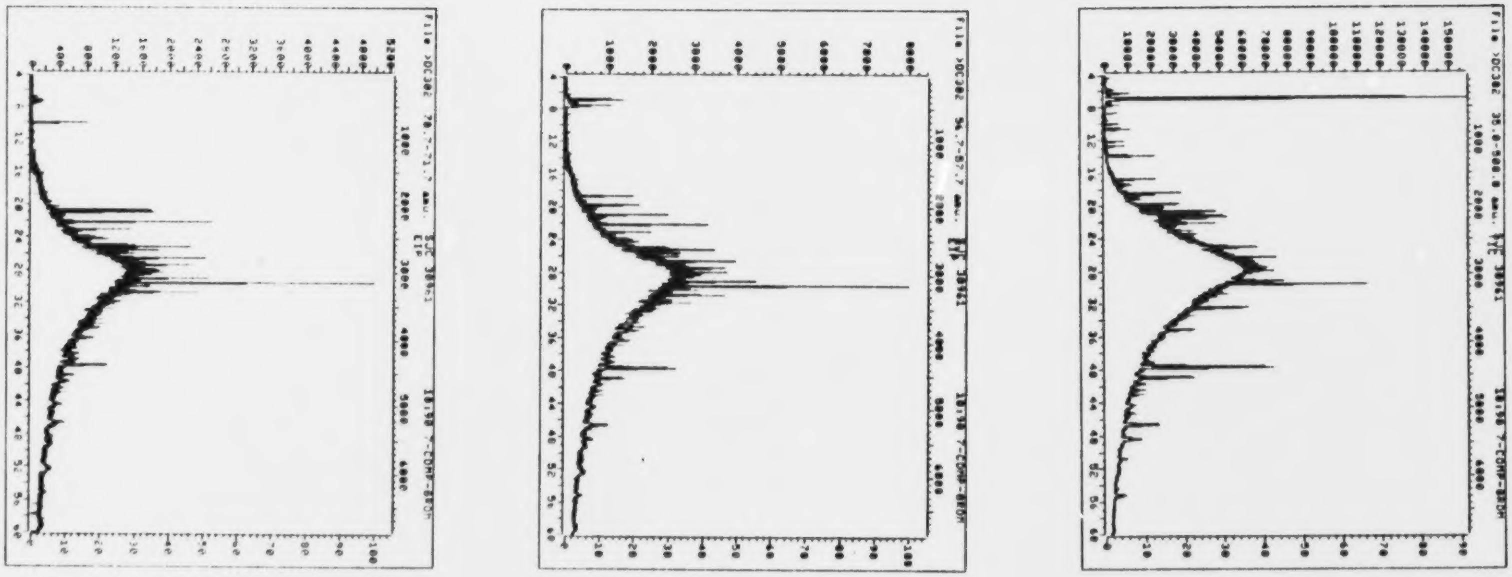


Table 8

Summary of Extractable Priority Pollutant Organics Found in Composites From Weekly Sites in Pennsylvania and California

Compound	Location Code	Number of Times Detected	Conc Range (ug/kg)
bis-(2-ethylhexyl)-phthalate	IX-A-1, IX-A-2, IX-A-3, IX-A-4, IX-A-5, IX-A-6 III-B-1, III-B-2	31	20,000-130,000
chrysene	IX-A-5, IX-A-2	3	1,300-3,000
fluoranthene	IX-A-5, III-B-2	4	920-1,400
phenanthrene	IX-A-5, III-B-1 IX-A-3, IX-A-2 III-B-2, IX-A-1	7	1,400-4,100
pyrene	IX-A-5, IX-A-6 III-B-2, IX-A-2 III-B-1, IX-A-3 IX-A-4, IX-A-1	18	420-4,400
N-nitrosodimethylamine	IX-A-6	1	1,000
2-nitrophenol	IX-A-6	1	1,000
p,p'-DDE	III-B-2	1	1,100
Naphthalene	III-B-2	1	720
Di-n-butyl phthalate	IX-A-3	1	2,000
phenol	IX-A-3, IX-A-4	2	2,900-6,400

The fact that the complex organic matrix found in most of these samples inhibited detection of target compounds was discussed briefly for pesticides and benzo(a)pyrene. In order for GC/MS to be able to quantify pesticides or PAH in these composted sludges at levels consonant with draft criteria levels (using full scan EI), extracts would need to be concentrated 10 to 100 times. However, such steps are precluded without additional cleanup methods in addition to the GPC method used in this study. The problems of interfering ions in the detection of target compounds near background "noise" in a complex matrix is exacerbated for molecules which have relatively simple mass spectra. Figures 5 and 6 demonstrate this problem for sample 28085 for which the data system yielded a chrysene value of 0.74 mg/kg. Figure 5 shows a segment of the reconstructed ion chromatograms with a large chromatographic "hump"; the internal standard chrysene-d12 (scan 3181) is shown. The quant routine quantitated native chrysene at scan 3191; Figure 5 shows three of the qualitative ions to be missing, however. In Figure 6, it can be seen that few peaks are greater than 10% of the parent ion intensity for a chrysene standard, while in the background-corrected sample spectrum for scan 3191, a large number of ions have intensities greater than 10% of the base peak (and many are of different m/z). At this low level, the presence of chrysene could not be confirmed in the sample, partly because of the low intensity side peaks in chrysene's mass spectrum and partly because of the presence of so many background ions in the spectrum.

While the chlorinated pesticides generally have more characteristic mass spectral patterns than the PAH, the background matrix still must be dealt with in order to achieve detection limits commensurate with the draft criteria. Possible methods include additional chromatographic cleanup and chemical treatment, negative ion chemical ionization (NICI) GC/MS, and selected ion monitoring (SIM) GC/MS. While neither of the latter two approaches offer the same veracity as full scan EI, they are both more selective than GC/EC and may offer the sensitivity advantage desired.

Table 9

Major Unknown Organics From Bimonthly Sites[a]

	Compound Class/Scan Number						
Sample	Alkane	Alkane	Alkyl Ketone	Alkane	Hydroxy Alkyl Ketone	Alkyl Phenol	Carboxylic Acid
I-B-1					269		
II-C-1					276		1912
III-B-3	203			240	279		
III-B-4		233			271		
III-J-1	202		240		277		
IV-B-1					269		
IV-D-1			238		276		
IV-F-1			238		275		
V-B-1					278		
VI-D-1			232		271		
VII-A-2					271		
VII-D-1	195		233		273		
VIII-F-1		237			275		
VIII-H-1					279		
VIII-J-1							
IX-A-10					274		
IX-D-1					271		
IX-D-3			238		278	1611	
X-C-1					273		
IX-B-1			236		273		
IX-D-2			239		276		
VIII-D-1							
IV-I-1			234				
V-K-1			240	240	276		

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a. See Appendix X for methods and chromatograms.

Table 9

Major Unknown Organics From Bimonthly Sites[a]

Sample	Carboxylic Acid	Carboxylic Acid Ester	Carboxylic Acid	Carboxylic Acid Ester	Sulfur	Carboxylic Acid Ester
I-B-1						
II-C-1		2153		2274	2314	
III-B-3			2215			
III-B-4					2316	
III-J-1					2314	
IV-B-1		2156	2218			
IV-D-1						
IV-F-1	1926	2151				
V-B-1						
VI-D-1						
VII-A-2					2307	
VII-D-1						
VIII-F-1		2154				
VIII-H-1						
VIII-J-1						
IX-A-10						
IX-D-1					2308	
IX-D-3					2316	
X-C-1		2158				2423
IX-B-1		2153			2306	
IX-D-2		2155	2216		2316	
VIII-D-1		2159	2224		2316	
IV-I-1						
V-K-1		2158	2219			

Table 9

Major Unknown Organics From Bimonthly Sites[a]

Sample	Cyclo Alkane	Carboxylic Acid	Carboxylic Acid	Carboxylic Acid Ester	Carboxylic Acid Ester	Alkane
I-B-1						
II-C-1			2563			
III-B-3	2480	2512				
III-B-4						3147
III-J-1				2784	2784	
IV-B-1	2480			2763		
IV-D-1						
IV-F-1						
V-B-1						
VI-D-1						
VII-A-2						
VII-D-1						
VIII-F-1						
VIII-H-1						
VIII-J-1						
IX-A-10						
IX-D-1						
IX-D-3						
X-C-1						
IX-B-1						
IX-D-2						
VIII-D-1		2517				
IV-I-1						
V-K-1						

Table 9

Major Unknown Organics From Bimonthly Sites[a]

Sample	Cyclo Alkane or Alkane	Cyclo Alkane	Alkane	U*	U*	U*	U*
I-B-1							
II-C-1							
III-B-3					344		
III-B-4							
III-J-1			3868				
IV-B-1							
IV-D-1				254			
IV-F-1				254			
V-B-1				257			
VI-D-1							
VII-A-2				249			
VII-D-1				251		466	
VIII-F-1				253			
VIII-H-1							
VIII-J-1							
IX-A-10							
IX-D-1							
IX-D-3	3291	3859					
X-C-1				251			
IX-B-1				252			
IX-D-2				255			
VIII-D-1						343	
IV-I-1							
V-K-1				255			

*U = Unknown

Table 9

Major Unknown Organics From Bimonthly Sites[a]

Sample	U*	U*	U*	U*	U*	U*	U*	U*	U*	U*
I-B-1		2360								
II-C-1			2519				3756			
III-B-3						3348	3687	3753		
III-B-4							3685	3755		
III-J-1						3352	3691	3761		
IV-B-1		2359		2837						
IV-D-1										
IV-F-1	2304									
V-B-1										
VI-D-1							3682			
VII-A-2							3681	3752		
VII-D-1					3281	3346	3680	3751		
VIII-F-1	2309									
VIII-H-1										
VIII-J-1							3690			
IX-A-10						3350	3684			
IX-D-1							3676	3774		
IX-D-3								3774	3899	3974
X-C-1					3287	3352	3690	3760		
IX-B-1					3282	3348	3684	3753		
IX-D-2					3285	3351	3704	3779		
VIII-D-1			2517		3287	3353	3697	3767		
IV-I-1					3285	3354	3692	3764		
V-K-1										

*U = Unknown

Table 9

Major Unknown Organics From Bimonthly Sites[a]

	U*	Sterol	Sterol	Acid	Acid	Ester	Ester	Ester
I-B-1								
II-C-1		3689	3756					
III-B-3		3687	3753					
III-B-4		3685	3755					
III-J-1		3691	3761					
IV-B-1								
IV-D-1								
IV-F-1								
V-B-1								
VI-D-1		3682	3752					
VII-A-2		3681	3751					
VII-D-1		3680	3751					
VIII-F-1								
VIII-H-1								
VIII-J-1		3690						
IX-A-10		3684						
IX-D-1		3676	3746					
IX-D-3		3710	3779					
X-C-1		3690	3760					
IX-B-1		3684	3753					
IX-D-2	4022	3704	3779					
VIII-D-1	4022	3697	3767					
IV-I-1		3692	3764	1462	1557	1827	1936	1997
V-K-1								

*U = Unknown

Table 9

Major Unknown Organics From Bimonthly Sites[a]

	Acid	Cyclo Alkane	Ester	Acid	Acid	Ester	Ester	Cyclo Alkane	Acid
I-B-1									
II-C-1									
III-B-3									
III-B-4									
III-J-1									
IV-B-1									
IV-D-1									
IV-F-1									
V-B-1									
VI-D-1									
VII-A-2									
VII-D-1									
VIII-F-1									
VIII-H-1									
VIII-J-1									
IX-A-10									
IX-D-1									
IX-D-3									
X-C-1									
IX-B-1									
IX-D-2									
VIII-D-1									
IV-I-1	2031	2090	2130	2172	2241	2292	2434	2472	2542
V-K-1									

Table 9

Major Unknown Organics From Bimonthly Sites[a]

	Alkohol	Alcohol	Alcohol	Alkane	Alkyl Benzene	Alkane	Alkane
I-B-1							
II-C-1							
III-B-3							
III-B-4							
III-J-1							
IV-B-1							
IV-D-1							
IV-F-1							
V-B-1							
VI-D-1							
VII-A-2							
VII-D-1							
VIII-F-1							
VIII-H-1							
VIII-J-1							
IX-A-10							
IX-D-1							
IX-D-3							
X-C-1							
IX-B-1							
IX-D-2							
VIII-D-1							
IV-I-1	3523	2615	3682				
V-K-1				1788	1851	1965	2387

Table 9

Major Unknown Organics From Bimonthly Sites[a]

	Alkane	Alkane	Alkane	Alkane	Alkane	Alkyl Benzene	Alkane
I-B-1							
II-C-1							
III-B-3							
III-B-4							
III-J-1							
IV-B-1							
IV-D-1							
IV-F-1							
V-B-1							
VI-D-1							
VII-A-2							
VII-D-1							
VIII-F-1							
VIII-H-1							
VIII-J-1							
IX-A-10							
IX-D-1							
IX-D-3							
X-C-1							
IX-B-1							
IX-D-2							
VIII-D-1							
IV-I-1							
V-K-1	2469	2616	2727	2964	3121	3381	3459

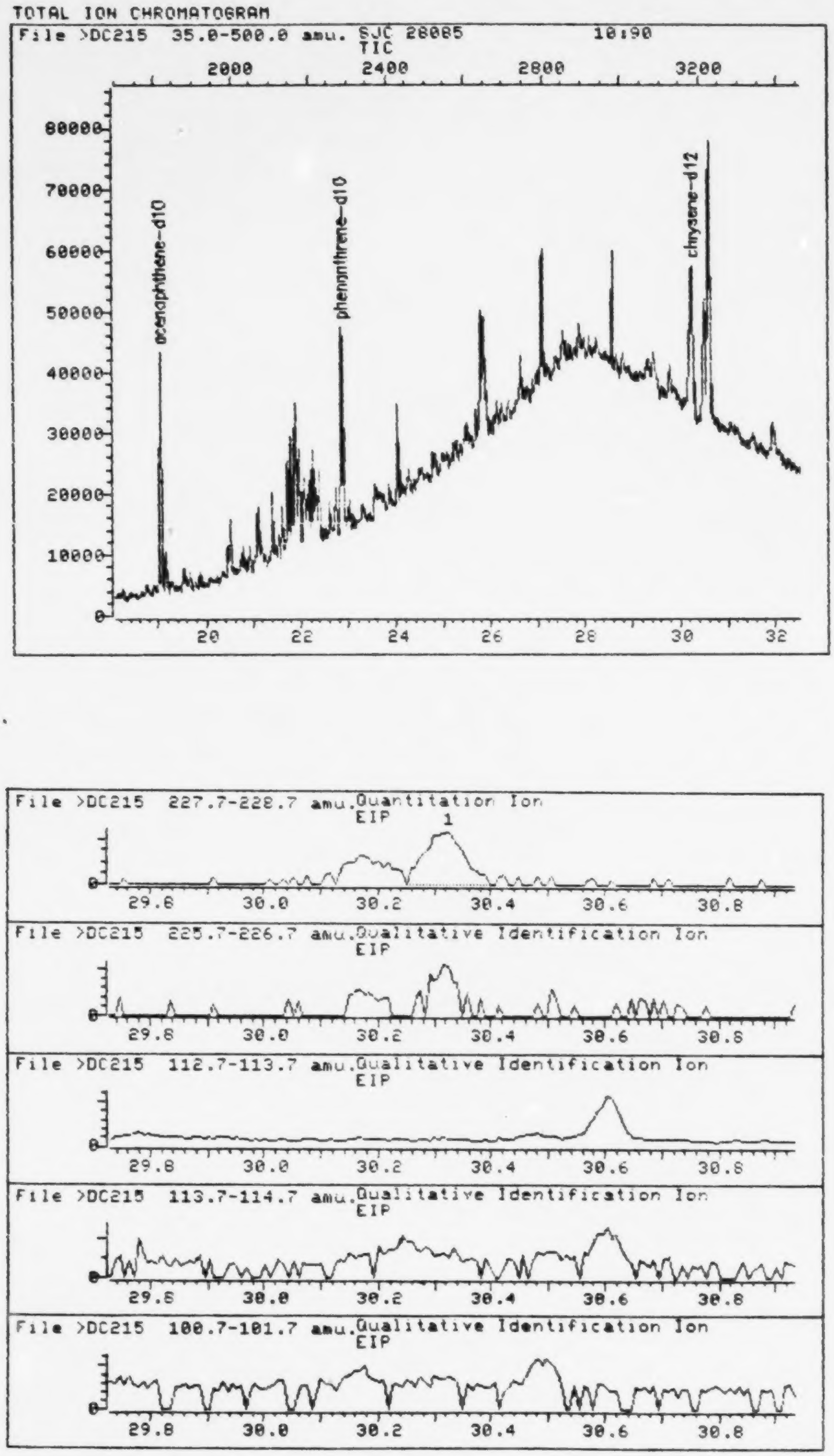

Figure 5

Total ion and extracted ion chromatogram of Sample 28085; EIP for Chrysene inconclusive at this level (0.74 mg/kg based on quantitation ion).

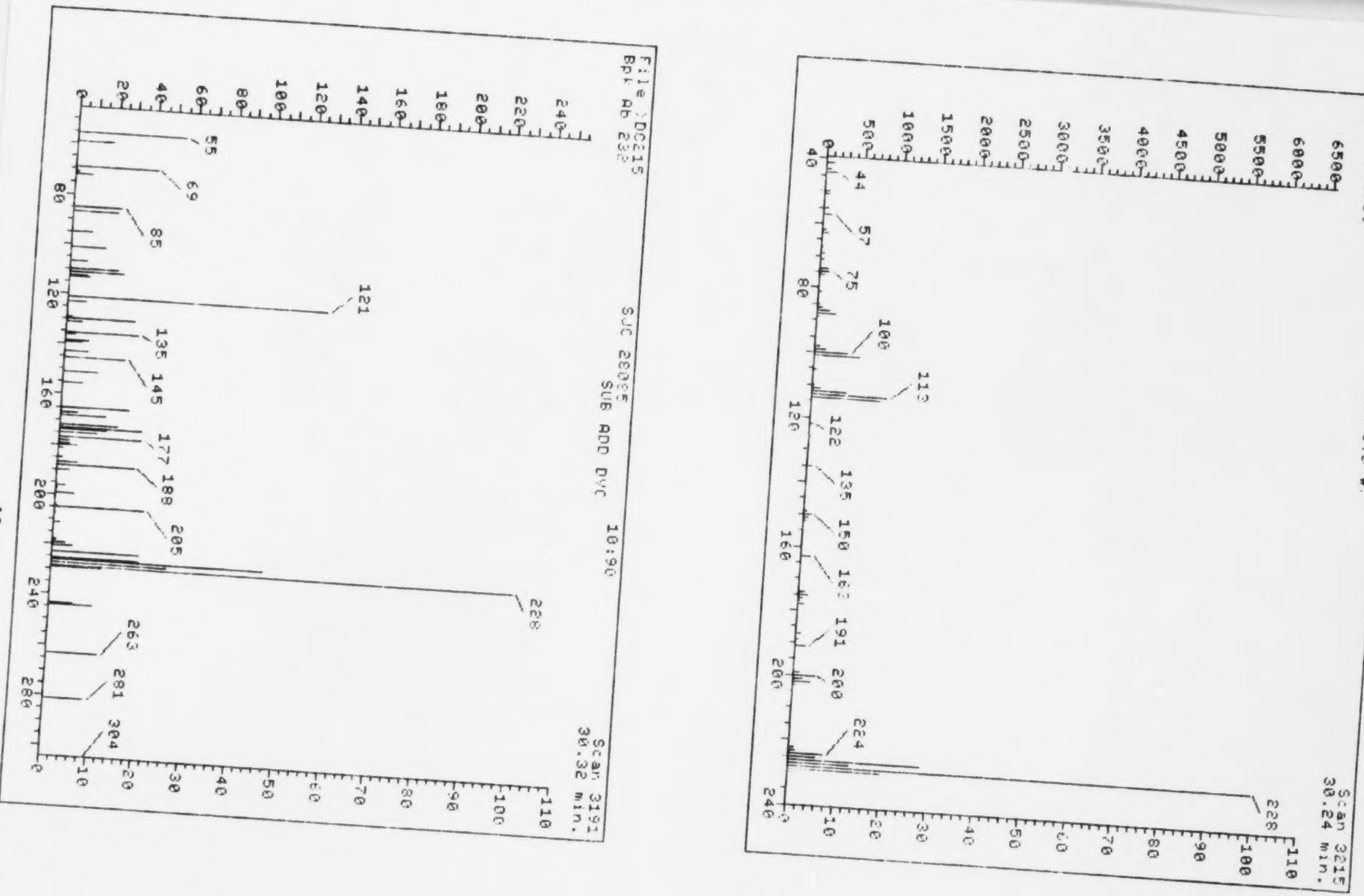

Figure 6

Comparison of Chrysene standard and scan 3191 (Sample 28085) mass spectra. Scan 3191 has been background subtracted. Remaining spectrum can not be confirmed as Chrysene.

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Appendix I

Sample Location, Type, and Date Information

SITE DESCRIPTIONS

The municipalities participating in this study and the associated sampling sites were identified by a semi-descriptive code. The three part code designation begins with a Roman numeral that corresponds to the EPA region in which the facility is located. The distribution of facilities by region is shown in Table 1.

Table 1A1. Regional Distribution of Study Sites[a]

Region	# Sites	Region	# Sites[a]
I	1	VI	1
II	1	VII	2
III	4	VIII	4
IV	4	IX	6
V	2	X	1

a By USEPA Region Designations

The second part of the code is a letter that represents the basic sludge treatment process utilized by the treatment facility. The letter (process) codes and the distribution of sites by process is shown in Table 2.

Table 2A1. Process Codes and Site Distribution

Code Letter	Treatment Process	# Sites
A	Windrow Composting	3
B	Aerated Static Pile Composting	7
C	In-Vessel Composting	2
D	Anaerobic Digestion - Air Drying	7
F	Aerobic Digestion - Air Drying	2
H	Proprietary Composting Process	1
I	Heat Drying	1
J	Aerated Windrow Composting	2
K	Thermal Conditioning/Filter Press	1
	Total	26

The last number in the identification code designates a specific sampling point or identifies specific facilities in the same region. The following summary describes each sampling site. The weekly and bimonthly sampling sites are also listed in Table 3 and 4 respectively at the end of each set of descriptions.

Weekly Sampling Sites

III-B-1 and III-B-2 --

These two sampling points were located at a large mid-Atlantic region composting facility. The city treated a total of 550 mgd of wastewater at three treatment plants. The wastewater was estimated to come from 7% industrial and 93% domestic sources. Both primary and secondary sludges were produced which were anaerobically digested and dewatered by a combination of centrifugation and filtration. The final sludge treatment process employed was aerated static pile composting and resulted in an annual compost production of 213,000 dry tons. The sludge was composted for 21 days with wood chips added as a bulking agent. The compost was cured for 30 days prior to distribution. Wood chips were removed by screening and recycled. The final sludge product was distributed in bulk. The product was used by farmers (66%), homeowners (5%), nurseries (6%), landscapers (15%), and other users (8%) including ballfields, golf courses, strip mine reclamation, race tracks, and special projects.

III-B-1--This sampling point was the "giveaway bin". Material placed in the giveaway bin was removed from a curing pile while still containing the wood chips. Age of the compost in the giveaway bin varied relative to the seasonal demand. The material in the bin was available to the public for uncontrolled home garden use.

III-B-2--This sampling point was the final screened compost. The screened compost was stockpiled while awaiting bulk distribution. This material represented the majority of compost distributed through the various utilization programs.

IX-A-1 through IX-A-6

These sampling points were located at a large West Coast composting facility. The treatment plant treated 360 mgd of wastewater which was estimated to come from 20% industrial and 80% domestic sources. Primary and secondary sludges were anaerobically digested and dewatered by centrifugation. The final sludge treatment process was windrow composting and resulted in an annual estimated compost production of 300,000 cubic yards. Composting time varied from 40 to 90 days depending on weather. Sawdust or previously composted sludge was used as a bulking agent. The compost was used by a private fertilizer company to produce a line of commercially retailed soil amendment products. The bagged products were sold predominantly to homeowners. The following descriptions nominally characterize the material sampled at each point. Undocumented deviations from these descriptions were known to occur.

IX-A-1-- This sampling point was final compost produced at the composting facility when sawdust was used as a bulking agent.

IX-A-2-- This sampling point was identical to IX-A-1 except that dried finished compost instead of sawdust was mixed with the wet sludge cake as a bulking agent.

IX-A-3--These samples represented a bagged commercially marketed product from the material described in IX-A-1, IX-A-2, and other sources. The compost was screened for uniformity prior to bagging. The product was marketed as an all purpose soil conditioner.

IX-A-4--This was a bagged commercially marketed product that contained an aged mixture of compost IX-A-1 or IX-A-2 and rice hulls. The mixture was screened for uniformity prior to bagging and was recommended as a vegetable and flower garden planting mix.

IX-A-5--This bagged commercially marketed product consisted of an aged mixture of compost and additional sawdust. The mixture was screened for uniformity and was marketed as a seed cover for new and reseeded lawns.

IX-A-6--This was a bagged commercially marketed product containing a blend of compost, sawdust, redwood chips, and fir bark. The blended material was aged and then screened before bagging. The product was recommended as a planting mix for acid loving plants.

Table 3A1. Weekly Sampling Sites[a]

LOCATION	Site Code	Sampling Point
1. Pensylvania Static Pile Composting Facility	III-B-1	Giveaway Bin
	III-B-2	Screened Compost
2. California Windrow Composting Facility	IX-A-1[b]	Final Sawdust Compost
	IX-A-2[b]	Final Recycle Compost
	IX-A-3[c]	Bagged Compost
	IX-A-4[c]	Bagged Compost with Rice Hull
	IX-A-5[c]	Bagged Compost with Sawdust
	IX-A-6[c]	Bagged Compost with Bark and Redwood

a. Sampled once every week from January 1986 - January 1987.

b. IX-A-1 and IX-A-2 were one sampling point.

c. Product compositions may have varied.

Bimonthly Sampling Sites

I-B-1--

Municipality I-B-1 treated 8.0 mgd of wastewater which was estimated to come from domestic (<50%), industrial (5%) and other (<50%) sources. Primary sludge was produced which was treated with lime prior to filtration dewatering. The final sludge treatment process employed was aerated static pile composting and resulted in an annual compost production of 4000 cubic yards per year. The sludge was composted for 21 days with woodchips added as a bulking agent. The compost was cured for 1 to 2 years prior to distribution. Wood chips were recycled. The final sludge product was distributed almost entirely in bulk by the operating agency. The product was used predominantly by homeowners.

II-C-1--

This county facility treated 7.0 mgd of wastewater which was estimated to come entirely from domestic sources. Primary and secondary sludges were produced which were not subjected to an additional stabilization process. Sludges were filtration dewatered. The final sludge treatment process employed was an in-vessel composting system and resulted in an annual compost production of 1,300 dry tons per year. The final sludge product was distributed 100% in bulk. The product was used entirely by landscapers.

III-B-3--

Municipality III-B-3 treated 309 mgd of wastewater. Primary and secondary sludges were produced which were treated with lime and filtration dewatered. The final sludge treatment process employed was aerated static pile composting and resulted in an annual compost production of 70,000 cubic yards. The sludge was composted for 21 days with wood chips added as a bulking agent. The compost was cured for 30 days prior to distribution. Wood chips were recycled. The final sludge product was distributed predominantly in bulk although a small portion was distributed in bags by a state agency. The product was used by homeowners (28%), nurseries (1%), landscapers (33%), and others (37%), including contractors, institutions, and top soil dealers.

III-B-4--

Treated wastewater was estimated to come from domestic (90%) and industrial (10%) sources. Secondary sludges were produced which were anaerobically digested and filtration dewatered. The final sludge treatment process employed was aerated static pile composting and resulted in an annual compost production of 9,200 cubic yards. The sludge was composted for 21 days with wood chips added as a bulking agent. The compost was cured for 30 days prior to distribution. Wood chips were recycled. The final sludge product was distributed entirely in bulk. The product was used by homeowners (49%), nurseries (2%), landscapers (35%), and others (14%).

III-J-1--

This facility treated 10 mgd of wastewater which was estimated to come from 95% domestic and 5% industrial sources. Primary, secondary, and chemical sludges were produced which were lime treated and anaerobically digested prior to filtration dewatering. The final sludge treatment process employed was an aerated windrow composting process and resulted in an annual compost production of 4,200 cubic yards. The sludge was composted for 21 days with recycled compost added as a bulking agent. The compost was cured for 30 days prior to distribution. The final sludge product was distributed 95% in bulk. The product was used by farmers (20%), homeowners (5%), landscapers (65%), and others (10%).

IV-B-1--

Treatment plant IV-B-1 treated 4.5 mgd of wastewater which was estimated to come from 35% domestic and 65% industrial sources. Secondary sludges were produced which were anaerobically digested and then dewatered by centrifugation. The final sludge treatment process employed was aerated static pile composting and resulted in an annual compost production of 6,500 cubic yards. The sludge was composted for 23 days with wood chips added as a bulking agent. The compost was cured for 23 days prior to distribution. Wood chips were recycled. The final sludge product was distributed almost entirely in bulk. The product was used by farmers (10%), homeowners (40%), nurseries (20%), and landscapers (30%).

IV-D-1--

This municipality treated 201 mgd of wastewater at a number of treatment plants which was estimated to come from 95% domestic and <5% industrial sources. Primary and secondary sludges were produced which were anaerobically digested and dewatered by centrifugation. The final sludge treatment process employed was drying beds and resulted in an annual sludge production of 20,000 dry tons. The final sludge product was distributed entirely in bulk by an outside company. The product was used by farmers.

IV-F-1--

Municipality IV-F-1 treated 2.6 mgd of wastewater which was estimated to come entirely from domestic sources. Secondary sludges were produced which were aerobically digested. The final sludge treatment process employed was drying beds. The final sludge product was distributed in bulk by the operating agency. The product was used by homeowners (60%) and nurseries (40%).

IV-I-1--

This facility treated 13 mgd of wastewater which was estimated to come from 95% domestic and 5% industrial sources. Secondary sludges were produced which were dewatered by centrifugation. The final sludge treatment process employed was a heat drying process and resulted in an annual sludge production of 3,000 dry tons. The final sludge product was distributed entirely in bulk by the operating agency. The product was used by farmers.

V-B-1--

Treatment plant V-B-1 treated 1.5 mgd of wastewater which was estimated to come from 90% domestic and 10% industrial sources. Primary and secondary sludges were produced which were thickened and filtration dewatered. The final sludge treatment process employed included both windrow and aerated static pile composting and resulted in an annual compost production of 900 dry tons. The sludge was composted with wood chips, sawdust, recycled compost, corn shucks and leaves added as bulking agents. The material was composted, cured, and stored for a total of 120 days prior to distribution. Wood chips were recycled. The final sludge product was distributed entirely in bulk by the operating agency. The product was used by farmers (5%), homeowners (90%), nurseries (2.5%), and landscapers (2.5%).

V-K-1--

This municipality treated 6.4 mgd of wastewater which was estimated to come from 32% industrial, 25% domestic, and 43% other sources. Primary and secondary sludges were produced which were thermally conditioned with a commercial system and filtration dewatered. The sludge treatment process resulted in an annual sludge production of 3300 cubic yards. The final sludge product was not distributed; the product was disposed in a landfill. This facility was included to evaluate the effects of thermal pretreatment.

VI-D-1--

Municipality IV-D-1 treated 112 mgd of wastewater which was estimated to come from 10% industrial and 90% domestic sources. Primary and secondary sludges were produced which were anaerobically digested. The final sludge treatment process employed was drying beds and resulted in an annual sludge production of 30,000 dry tons. The dried sludge was stored prior to distribution. The final sludge product was distributed in bulk by the operating agency. The product was used by the Park and Highways Departments.

VII-D-I--

This municipality treated 38 mgd of wastewater which was estimated to come from 55% industrial and 45% domestic sources. Primary and secondary sludges were produced which were anaerobically digested and dewatered by a combination of filtration and lagooning. The final sludge treatment process employed was windrow drying and resulted in an annual sludge production of 5,000 dry tons. The first three samples received from this site were composites of sludge that had been windrow dried and stored for two or more years prior to distribution. Sludge processing was changed at the facility to include the addition of 20% cement kiln dust to the wet sludge. The remaining three samples contained the kiln dust and represented recently processed sludge. The final sludge product was distributed in bulk to other city agencies after a two year holding period.

VII-A-2--

Municipality VII-A-2 treated 16.5 mgd of wastewater which was estimated to come from 20% industrial and 80% domestic sources. Primary and secondary sludges were produced which were anaerobically digested and filtration dewatered. The final sludge treatment process employed was windrow composting and resulted in an annual compost production of 3100 dry tons. The sludge was composted for 42 days without any added bulking agents. The compost was cured for 1.5 years prior to distribution. The final sludge product was distributed entirely in bulk by the operating agency. The product was used by homeowners (10%), landscapers (45%) and governmental agencies (45%).

VIII-D-1--
This facility treated 2.0 mgd of wastewater which was estimated to come from 90% domestic and 10% other sources. Secondary sludges were anaerobically digested. The final sludge treatment process employed was drying beds. The final sludge product was distributed in bulk by the operating agency. The product was used by homeowners (85%) and landscapers (15%).

VII-F-1--
Treatment plant VIII-F-1 treated a variable flow of 4 to 10 mgd of wastewater which was estimated to come from 99% domestic and 1% industrial sources. Secondary sludges were produced which were aerobically digested. The final sludge treatment process employed was drying beds and resulted in an annual sludge production of 260 dry tons. The dried sludge was stored prior to distribution. The final sludge product was distributed in bulk by the operating agency. The product was used entirely by homeowners.

VIII-H-1--This municipality treated 7 mgd of wastewater which was estimated to come from 2% industrial and 90% domestic sources. Secondary sludges were produced which were anaerobically digested and filtration dewatered. The sludge was composted by a private company and used to produce a line of commercially marketed products. The sludge was composted for 180 days with wood chips, sawdust, and proprietary ingredients added as bulking agents. The final sludge product was distributed 50% in bulk and 50% in bags. The product was used by homeowners (70%), nurseries (10%), landscapers (15%), and others (5%).

VIII-J-1--
Municipality VIII-J-1 treated 150 mgd of wastewater which was estimated to come from 90% domestic and 10% industrial sources. Primary and secondary sludges were produced which were anaerobically digested and dewatered by centrifugation. The final sludge treatment process employed was aerated windrow composting and resulted in an annual compost production of 30,000 dry tons. The sludge was composted for 25 days with wood chips and other materials added as bulking agents. The final sludge product was distributed in bulk by the operating agency . The product was used by farmers, homeowners, nurseries, landscapers, and others.

IX-A-10--
This municipality treated 8.5 mgd of wastewater which was estimated to come from 8% industrial, 69% domestic, and 23% commercial and institutional sources. Primary and secondary sludges were produced which were anaerobically digested and dewatered by a combination of gravity thickening, drying beds, and centrifugation. Ths final sludge treatment process employed was windrow composting and resulted in an annual compost production of 20,000 cubic yards. The sludge was composted for 60 days with rice hulls added as a bulking agent. The compost was cured for 30 days

prior to distribution. The final sludge product was distributed in bulk by an outside contractor. The product was used by homeowners (10%), nurseries (20%), and landscapers (70%).

IX-B-1--

This regional facility treated 80 mgd of wastewater which was estimated to come from 13% industrial, 65% domestic, and 22% commercial sources. Primary and secondary sludges were produced which were anaerobically digested and dewatered by centrifugation. The final sludge treatment process employed was aerated static pile composting and resulted in an annual compost production of 125,000 cubic yards. The sludge was composted for 25 days with wood chips added as a bulking agent. The compost was cured for 30 days prior to distribution. Wood chips were recycled. The final sludge product was distributed 95% in bulk and 5% in bags by an outside contractor. The product was used by homeowners (70%), nurseries (5%), and landscapers (25%).

IX-D-1--

Municipality IX-D-1 treated 165 mgd of wastewater which was estimated to come from 7% industrial and 93% domestic sources. Primary and secondary sludges were produced which were anaerobically digested. The final sludge treatment process employed was drying beds and resulted in an annual sludge production of 50,000 cubic yards. The final sludge product was stockpiled. Marketing was planned for the future.

IX-D-2--

Treatment plant IX-D-2 treated 150 mgd of wastewater which was estimated to come from 8% industrial and 92% domestic sources. Primary and secondary sludges were produced which were anaerobically digested and dried in lagoons. The final sludge treatment process employed was drying beds and resulted in an annual sludge production of 30,000 dry tons. The final sludge product was distributed entirely in bulk by an outside contractor. The product was used farmers.

IX-D-3--

This facility treated 155 mgd of wastewater which was estimated to come from 5% industrial and 95% domestic sources. Primary and secondary sludges were produced which were anaerobically digested and dried in lagoons. The final sludge treatment process employed was drying beds and resulted in an annual sludge production of 40,000 dry tons. The final sludge product was distributed in bulk by an outside contractor. The product was used by farmers (90%) and landscapers (10%).

Table 4A1. Bimonthly Sampling Sites*

Site Code		Location	Process	Classification
1.	I-B-1	Maine	Static Pile	PFRP
2.	II-C-1	New Jersey	In-Vessel	PFRP
3.	III-B-3	Maryland	Static Pile	PFRP
4.	III-B-4	Virginia	Static Pile	PFRP
5.	III-J-1	Virginia	Aerated Windrow	PFRP
6.	IV-B-1	North Carolina	Static Pile	PFRP
7.	IV-D-1	Florida	Drying Bed	PSRP
8.	IV-F-1	Florida	Aerobic Digestion-Air Dried	PSRP
9.	IV-I-1	Georgia	Heat Drying	PFRP
10.	V-B-1	Indiana	Static Pile	PFRP
11.	V-K-1	Indiana	Thermal/Filter Press	PFRP
12.	VI-D-1	Texas	Air Dried	PSRP
13.	VII-D-1	Kansas	Air Dried	PSRP
14.	VII-A-2	Kansas	Windrow	PFRP
15.	VIII-D-1	Colorado	Air Dried	PSRP
16.	VIII-F-1	Utah	Aerobic Digestion-Air Dried	PSRP
17.	VIII-H-1	Montana	Proprietary	PFRP
18.	VIII-J-1	Colorado	Aerated Windrow	PFRP
19.	IX-A-10	California	Windrow	PFRP
20.	IX-B-1	California	Static Pile	PFRP
21.	IX-D-1	California	Air Dried	PSRP
22.	IX-D-2	Arizona	Air Dried	PSRP
23.	IX-D-3	Arizona	Air Dried	PSRP
24.	X-C-1	Oregon	In-Vessel	PFRP

* Sampled once every two months from April 1986 - April 1987.

Note: Air dried sludges were anaerobically digested unless otherwise stated.

X-C-1--

Municipality X-C-1 treated 71 mgd of wastewater which was estimated to come from 40% industrial and 60% domestic sources. Primary and secondary sludges were produced which were anaerobically digested and filteration dewatered. The final sludge treatment process employed was an in-vessel composting system and resulted in a proposed annual compost production of 60,000 cubic yards. The sludge was composted for 15 days with sawdust added as a bulking agent. The compost was cured for 15 days prior to distribution. The final sludge product was distributed in bulk by an outside contractor. The product was used by homeowners (1%), nurseries (4%), landscapers (70%), and other users (25%).

SELECTION OF MICROORGANISMS FOR TESTING.

Appendix I

Table 5A1. Additional Description of Sludge Composites

Site	Composite Date	Sample Log Number
IX-A-1	01/16/86 - 03/06/86	28065
IX-A-1	03/13/86 - 04/30/86	38066
IX-A-1	05/08/86 - 06/26/86	28067
IX-A-1	07/03/86 - 10/16/86	28068
IX-A-1	10/30/86 - 12/23/86	30951
IX-A-1	01/16/86 - 09/18/86	28069
IX-A-2	10/02/86 - 12/04/86	30952
IX-A-3	01/16/86 - 03/06/86	28070
IX-A-3	03/13/86 - 04/30/86	28071
IX-A-3	05/08/86 - 06/26/86	28072
IX-A-3	07/31/86 - 08/21/86	28073
IX-A-3	08/28/86 - 10/16/86	28074
IX-A-3	10/30/86 - 12/18/86	30957
IX-A-4	01/16/86 - 03/06/86	28075
IX-A-4	03/13/86 - 05/08/86	28076
IX-A-4	05/14/86 - 07/03/86	28077
IX-A-4	07/10/86 - 08/28/86	28078
IX-A-4	09/04/86 - 11/06/86	30958
IX-A-4	11/13/86 - 12/31/86	30959
IX-A-5	01/16/86 - 03/06/86	28079
IX-A-5	03/13/86 - 04/24/86	28080
IX-A-5	05/18/86 - 06/26/86	28081
IX-A-5	07/03/86 - 08/21/86	28082
IX-A-5	08/28/86 - 10/16/86	28083
IX-A-5	10/30/86 - 12/18/86	30960
IX-A-6	01/23/86 - 03/13/86	28084
IX-A-6	03/20/86 - 05/08/86	28085
IX-A-6	05/14/86 - 07/03/86	28086
IX-A-6	07/10/86 - 08/28/86	28087
IX-A-6	09/04/86 - 10/30/86	30961
IX-A-6	11/06/86 - 12/23/86	30962
III-B-1	01/24/86 - 03/21/86	28057
III-B-1	03/28/86 - 05/18/86	28058
III-B-1	05/19/86 - 07/29/86	28059
III-B-1	08/04/86 - 09/22/86	28060
III-B-1	09/29/86 - 11/24/86	30955
III-B-1	12/01/86 - 01/20/87	30956
III-B-2	01/23/86 - 04/08/86	28061
III-B-2	04/13/86 - 06/10/86	28062
III-B-2	06/17/86 - 08/19/86	28063
III-B-2	08/27/86 - 10/14/86	28064
III-B-2	10/20/86 - 12/01/86	30953
III-B-2	12/08/86 - 01/20/87	30954
IV-F-1	07/14/86 - 01/21/87	30963
VIII-F-1	05/12/86 - 10/29/86	30964
IX-D-3	05/15/86 - 10/27/86	30965
X-C-1	05/19/86 - 10/31/86	30966
IV-D-1	05/29/86 - 11/12/86	30967

Table 5A1. Additional Description of Sludge Composites

(Continued)

IV-I-1	05/06/86 - 11/05/86	30968
III-J-1	05/29/86 - 11/10/86	30969
VIII-D-1	05/06/86 - 10/20/86	30970
III-B-4	05/05/86 - 10/21/86	30971
VI-D-1	05/12/86 - 10/29/86	30972
VII-A-2	05/19/86 - 11/03/86	30973
VII-A-1	05/16/86 - 11/20/86	30974
IX-D-1	04/07/86 - 09/22/86	28046
IX-D-2	06/09/86 - 10/14/86	28047
IX-A-10	04/14/86 - 09/29/86	28048
IX-B-1	04/07/86 - 09/22/86	28049
VIII-J-1	04/07/86 - 09/22/86	28050
VIII-H-1	04/09/86 - 09/29/86	28051
V-K-1	04/21/86 - 10/06/86	28052
IV-B-1	04/21/86 - 10/06/86	28053
III-B-3	04/21/86 - 10/06/86	28054
II-C-1	04/21/86 - 10/14/86	28055
I-B-1	04/28/86 - 10/14/86	28056
V-B-1	06/18/86 - 12/12/86	32462

Appendix II

Procedures for Analysis of Arsenic, Selenium, and Antimony by Hydride Generation

Appendix II

Determination of Arsenic, Selenium, and Antimony by Hydride Generation

1. Summary of Procedure

1.1 A single sample preparation procedure is used for the digestion of As, Se, and Sb. The digested sample is transferred to a 100 ml volumetric flask, and separate aliquots are taken for the instrumental analysis of each of these metals.

1.2 These analyses are based on the generation and subsequent evolution of arsine gas (AsH_3), hydrogen selenide gas (H_2Se), and stibine gas (SbH_3) produced by the action of sodium borohydride ($NaBH_4$) on trivalent arsenic, tetravalent selenium, and trivalent antimony, respectively, in acid media.

1.3 The hydride gas generated is flushed with argon into a quartz cell, which is heated by a slightly reducing air/acetylene flame.

1.4 Atomic absorption spectroscopy is used to analyze the hydride gas in the quartz cell.

2. Applications

2.1 The following procedure is suitable for compost, wastewater, sludge, and industrial waste samples.

2.2 Deuterium background correction is used at each absorbance line. Arsenic 193.7 nm, selenium 196.0 nm, antimony 217.6 nm.

3. Interferences

3.1 Large concentrations of transition metals, such as Cd, Co, Cr, Cu, Ni, and Pb, in the final solution have been reported to interfere with arsenic and selenium by hydride generation (1-7).

Use of 6.5 M HCl in the digestion and analysis will increase the range of interference free determination for arsenic and selenium.

3.2 Samples which have boiled to SO_3 fumes should not be in the path of boiling HNO_3 fumes. This can cause nitrate contamination, which can result in loss of signal and erratic absorbance readings.

3.3 All organic material must be oxidized. Organic material left behind can cause foaming in the reaction flask during instrumental analysis. This will cause sample to be drawn into the lines and quartz cell, causing contamination of the whole operation.

3.4 In the instrumental analysis, both the temperature and the volume of the reaction mixture will affect the resulting peak area. To insure consistent results, bring all standards and samples to room temperature and to the same working volume.

4. Reagents

4.1 Use nanopure water at all times.

4.2 Concentrated nitric acid.

4.3 Concentrated sulfuric acid. Test each lot of acid before using to be certain the acid is not contaminated with arsenic, selenium, or antimony.

4.4 Concentrated hydrochloric acid.

4.5 Generating solution (6.5 M HCl). Add 1090 mls of concentrated HCl to approximately 700 mls of nanopure water. Dilute to 2 liters. Mix well and transfer to a 2.5 liter bottle fitted with a 50 ml dispenser.

4.6 Sodium Borohydride (NaBH4). WARNING: DO NOT ADD NaBH4 DIRECTLY TO WATER. Explosion and/or fire can occur. Solid NaBH4 should be stabilized in a 1% NaOH solution.

4.6.1 2% NaBH4 solution - for arsenic and antimony. Add 2 grams of NaOH to 200 mls of water. Mix and dissolve. Add 4 grams of NaBH4. Swirl and use immediately.

4.6.2 0.5% NaBH4 solution - for selenium. Add 2 grams of NaOH to 200 mls of water. Mix and dissolve. Add 1 gram of NaBH4. Swirl and use immediately.

4.7 10% potassium iodide (KI)- for arsenic. Dissolve 10 grams of KI in 100 mls of water and transfer into a dark bottle. Prepare fresh daily.

4.8 40% potassium iodide (KI)- for antimony. Dissolve 40 grams of KI in 100 mls of water and transfer into a dark bottle. Prepare fresh daily.

5. Equipment

5.1 Instrumentation Laboratory Atomic Absorption Spectrophotometer. IL 951 Video AAS.

5.2 Electrodeless Discharge Lamps (EDL). These EDLs are used as the light source and recommended manufacturer power settings are followed.

As EDL

Se EDL
Sb EDL

5.3 Intrumentation Laboratory semi- Automatic Vapor Accessory (AVA) is used to generate the hydride in each of the different analyses. See picture on the back page.

5.4 A quartz cell heated by a slightly reducing air acetylene flame is used for the atomization of arsenic, selenium, and antimony.

5.5 150 ml fleakers.

6. Sample Preparation and Digestion.

6.1 Take enough initial sample so that appropriate aliquots can be taken for As, Se, and Sb. Place the sample into a 125 ml erlenmeyer flask.

Sample size guidelines for different sample types:

Compost (wet)	0.75 grams
Waste water	50 mls
Sludge	25 mls
Industrial Waste	25 mls

6.2 Add 5 mls of nitric and 5 mls of sulfuric acids to the erlenmeyer flask containing the sample.

6.3 Digest the sample on the hot plate until the volume approaches 10 mls. Cool.

6.4 Add 4 mls of nitric acid and fit with an air condenser. Reflux for 4 hours.

6.5 Cool the sample, rinse the reflux condenser with water, and remove the condenser. Heat the sample on a hot plate to the first appearance of SO3 fumes. Do not let the sample fume for more than 45 seconds. Cool.

6.6 Add 20 mls of water and 30 mls of HCl. Boil gently for 25 minutes.

6.7 Cool. Transfer the sample to a 100 ml volumetric flask, making sure to rinse with a 6.5 M HCl solution. Dilute to the mark with 6.5 M HCl.

6.8 Separate aliquots can now be taken for the analyses of As, Se, and Sb.

7., 8., 9. Instrumentation

7. Arsenic

7.1 Standards.

7.1.1 Use a Hamilton dilutor with 2% HCl as a diluent. Prepare a 10 ug/ml arsenic standard by making a 1/100 dilution of a 1000 ug/ml arsenic stock standard.

7.1.2 Prepare a 0.2 ug/ml arsenic standard by making a 1/50 dilution of the 10 ug/ml arsenic standard.

7.1.3 0.03 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.15 ml of 0.2 ug/ml arsenic standard with a 0.85 ml rinse of the 2% HCL. Set this standard up in triplicate.

7.1.4 0.05 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.25 ml of 0.2 ug/ml arsenic standard with a 0.75 ml rinse of the 2% HCL. Set this standard up in triplicate plus one extra standard for every 6 samples that are to be analyzed.

7.1.5 0.07 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.35 ml of 0.2 ug/ml arsenic standard with a 0.65 ml rinse of the 2% HCL. Set this standard up in triplicate.

7.1.6 0.10 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.50 ml of 0.2 ug/ml arsenic standard with a 0.50 ml rinse of the 2% HCL. Set this standard up in triplicate.

7.1.7 Blank. Add 51 mls of 6.5 M HCl to a 150 ml fleaker. Set up a standard blank for every 6 samples that are to be analyzed.

7.2 Add 50 mls of 6.5 M HCl to a 150 ml fleaker. A 1 ml aliquot of sample is added to this 6.5 M HCl solution so that the total volume is equal to 51 mls. For a 2 ml sample aliquot use 49 mls of 6.5 M HCl so that the final volume is equal to 51 mls. Whatever aliquot of sample is needed the final volume should be made to equal to 51 mls by adding 6.5 M HCl.

7.3 Line the standards up in the order in which they will be analyzed. Add 1 ml of 10% KI to the first standard blank. Add KI to each of the standards in 1 1/2 minute increments. A stop watch can be used to keep track of the time.

7.4 The first standard should be analyzed when it has set with KI for 30 minutes. The standards can be run consecutively, because each analysis takes 1 1/2 minutes.

7.5 The standards should be analyzed in the scale expansion mode and the absorbances recorded. The average of triplicates of each standard concentration, 0.03, 0.05, 0.07, 0.10 ug, should be entered into the instrument for the calibration curve.

7.6 The samples should be treated with KI in the same manner as the standards in 7.3 and 7.4. A blank and an auto calibrate standard is analyzed after every six samples and should be lined up accordingly for the addition of KI. The samples are analyzed in the concentration mode.

7.7 Instrumental Parameters - Arsenic

reagent:	2% NaBH4 in 1% NaOH
reagent amount (AVA):	2.0 mls
reaction time (AVA):	0.5 minutes
integration time:	12 seconds
argon flow:	3.5 liter/minute
flame:	slightly reducing
bandwidth:	2 nm
wavelength:	193.6 nm
scale expansion:	1.0
background correction:	D2

8. Selenium

8.1 Standards

8.1.1 Use a Hamilton dilutor with 2% HCl as a diluent. Prepare a 10 ug/ml selenium standard by making a 1/100 dilution of a 1000 ug/ml selenium stock standard.

8.1.2 Prepare a 0.2 ug/ml selenium standard by making a 1/50 dilution of the 10 ug/ml selenium standard.

8.1.3 0.03 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.15 ml of 0.2 ug/ml selenium standard with a 0.85 ml rinse of the 2% HCL. Set this standard up in triplicate.

8.1.4 0.05 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.25 ml of 0.2 ug/ml selenium standard with a 0.75 ml rinse of the 2% HCL. Set this standard up in triplicate plus one extra standard for every 6 samples that are to be analyzed.

8.1.5 0.07 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.35 ml of 0.2 ug/ml selenium standard with a 0.65 ml rinse of the 2% HCL. Set this standard up in triplicate.

8.1.6 0.10 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.50 ml of 0.2 ug/ml selenium standard with a 0.50 ml rinse of the 2% HCL. Set this standard up in triplicate.

8.1.7 Blank. Add 51 mls of 6.5 M HCl to a 150 ml fleaker. Set up a standard blank for every 6 samples that are analyzed.

8.2 Add 50 mls of 6.5 M HCl to a 150 ml fleaker. A 1 ml sample volume is added to this 6.5 M HCl solution so that the total volume is equal to 51 mls. For a 2 ml sample aliquot use 49 mls of 6.5 M HCl so that the final volume is equal to 51 mls. Whatever aliquot of sample is needed the final volume should be made to equal to 51 mls by adding 6.5 M HCl.

8.3 The standards should be analyzed in the scale expansion mode and the absorbances recorded. The average of triplicates of each standard concentration, 0.03, 0.05, 0.07, 0.10 ug, should be entered into the instrument for the calibration curve.

8.4 The samples should be analyzed in the concentration mode.

8.5 Instrumental Parameters - Selenium

reagent: 0.5% $NaBH_4$ in 1% NaOH
reagent amount (AVA): 1.0 mls
reaction time (AVA): 0.5 minutes
integration time: 12 seconds
argon flow: 3.5 liter/minute
flame: slightly reducing
bandwidth: 2 nm
wavelength: 196.0 nm
scale expansion: 1.0
background correction: D2

9. Antimony

9.1 Standards

9.1.1 Use a Hamilton dilutor with 2% HCl as a diluent. Prepare a 10 ug/ml antimony standard by making a 1/100 dilution of a 1000 ug/ml antimony stock standard.

9.1.2 Prepare a 0.2 ug/ml antimony standard by making a 1/50 dilution of the 10 ug/ml antimony standard.

9.1.3 0.03 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.15 ml of 0.2 ug/ml antimony standard with a 0.85 ml rinse of the 2% HCL. Set this standard up in triplicate.

9.1.4 0.05 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.25 ml of 0.2 ug/ml antimony standard with a 0.75 ml rinse of the 2% HCL. Set this standard up in triplicate plus one extra standard for every 6 samples that are to be analyzed.

9.1.5 0.07 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.35 ml of 0.2 ug/ml antimony standard with a 0.65 ml rinse of the 2% HCL. Set this standard up in triplicate.

9.1.6 0.10 ug standard. Add 50 mls of 6.5 M HCl to a 150 ml fleaker. Use the diluter to add 0.50 ml of 0.2 ug/ml antimony standard with a 0.50 ml rinse of the 2% HCL. Set this standard up in triplicate.

9.1.7 Blank. Add 51 mls of 6.5 M HCl to a 150 ml fleaker. Set up a standard blank for every 6 samples which are analyzed.

9.2 Add 50 mls of 6.5 M HCl to a 150 ml fleaker. A 1 ml aliquot of sample is added to this 6.5 M HCl solution so that the total volume is equal to 51 mls. For a 2 ml sample aliquot use 49 mls of 6.5 M HCl so that the final volume is equal to 51 mls. Whatever aliquot of sample is needed the final volume should be made to equal to 51 mls by adding 6.5 M HCl.

9.3 Line the standards up in the order in which they will be analyzed. KI is not added to the standards because the trivalent antimony standard is in the correct valence state for the generation of stibine gas.

9.4 The standards are analyzed in the scale expansion mode and the absorbances recorded. The average of triplicates of each standard concentration, 0.03, 0.05, 0.07, 0.10 ug, is entered into the instrument for the calibration curve.

9.5 Line the samples up in the order in which they are to be analyzed, adding a standard blank and an auto calibrate standard after every six samples. Add 2.5 mls of 40% KI to the first sample blank. Add KI to each of the samples in 1 1/2 minute increments, using a stop watch to keep track of the time. Remember not to add KI to the standard blank or auto calibrate standard even though these samples should be timed the same as the samples so that the samples and standards can be run consecutively.

9.6 The first sample should be analyzed when it has set with KI for 10 minutes. The samples can be run consecutively, because each analysis takes 1 1/2 minutes. The samples are run in the concetration mode.

9.7 Instrumental Parameters - Antimony

reagent: 2% NaBH4 in 1% NaOH
reagent amount (AVA): 2.0 mls
reaction time (AVA): 1.0 minute
integration time: 8 seconds
argon flow: 3.5 liter/minute
flame: slightly reducing
bandwidth: 1 nm
wavelength: 217.6 nm
scale expansion: 1.0
background correction: D2

10. Calculations

$$\text{metal ug/ml} = \frac{Vs(I-B)}{Vo \times D \times Vf}$$

I = instrument reading (ug)
B = blank reading (ug)
D = dilution factor
Vo = original sample volume (mls) or weight (g)
Vs = digested sample (100 mls)
Vf = aliquot of digested sample (mls)

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Appendix III

Procedures for Volatile Organics Analyses

Appendix III

Analysis of Volatile Organic Compounds in Solids by Purge and Trap

Summary of Procedure

The purge and trap method for the analysis of trace volatile organic compounds in solids utilizes a liquid sample concentrator to concentrate the compounds, and a gas chromatograph with a wide-bore fused silica column for the separation of the compounds. A Photoionization Detector (PID) and a Hall Electrolytic Conductivity Detector (HECD) are used for the detection of the volatile organic compounds.

A sample is extracted with methanol and an aliquot of the extract is added to organic free water in a purge vessel. Helium is bubbled through the sample for a specific amount of time, partitioning the volatile organics into the gas phase. These organics are passed to a trap that is capable of sorbing the compounds of interest. The trap is then thermally desorbed, and the organics are tranferred to the gas chromatograph column where they are separated and then detected with a PID and HECD connected in series. A data system is used for the identification and quantitation of the detected compounds.

1. Scope and Application

1.1 This procedure is applicable to soils, dried composts, and sludge samples that are too thick to pipet accurately.

1.2 This method is suitable for all concentrations above 25 ug/Kg. The actual detection limits will depend upon the sample size, the compound analyzed, the matrix of the sample, the condition of the instrumentation, and any interferences present.

2. Instrumentation

2.1 Tekmar 4000 Sample Concentrator or equivalent. The recommended operating conditions are as follows:

2.1.1 Purge gas: Helium 99.9995%

2.1.2 Purge pressure: 20 psi

2.1.3 Purge rate: 40 ml/min.

2.1.4 Purge time: 10 minutes

2.1.5 Dry purge time: 5.0 minutes

2.1.6 Desorb time: 4.0 minutes

2.1.7 Bake time: 10 minutes

2.1.8 Purge ready: 28 C

2.1.9 Desorb preheat: 125 C

2.1.10 Desorb: 180 C

2.1.11 Bake: 200 C

2.1.12 Valve: 135 C

2.1.13 Transfer line; 125 C

2.2 Varian 3300 gas chromatograph with sub-ambient capability. The GC program currently used is -50 C to 0 C @ 10 /min; 0 C to 140 C @ 6 /min; 2-minute hold; 15 /min. to 185 C; 15-minute final hold.

2.2.1 Helium carrier flowrate: 7.4 ml/min.

2.2.2 Helium makeup gas flowrate: 20 ml/min.

2.2.3 Injector temperature: 150 C.

2.2.4 PID base temperature: 200 C.

2.2.5 HECD base temperature: 225 C

2.3 GC column: 30 meter by 0.53 mm I.D. DB-624 'Megabore" fused silica capillary column (J&W Scientific, Inc.) or equivalent.

2.4 Tracor 700 A Hall Electrolytic Conductivity Detector set for use in the halogen mode.

2.4.1 Nickel reaction tube @ 825 C.

2.4.2 1-propanol electrolyte @ 0.5 ml/min.

2.4.2 1-propanol electrolyte @ 0.5 ml/min.

2.5 HNU PI-52-02A Photoionization Detector with a 10.2 eV lamp.

2.6 Data collection is handled by a Hewlett-Packard 1000A computer and Nelson Analytical, Inc. interfaces and software.

3. Apparatus

3.1 Tekmar 4000 trap: 30.5 cm by 0.125 OD, 0.105" I.D. stainless steel containing approximately 17 cm Tenax TA and 8.5 cm activated charcoal.

3.2 A water vapor trap is connected between the purge vessel and the trap. This consists of a 30 cm by 1/4" O.D. U-shaped glass tube placed in a container of crushed ice.

3.3 125 ml, 40 ml, 7.4 ml, and 1.8 ml screw cap septum vials, rinsed with deionized water and oven dried at 130 C.

3.4 5 ml purge vessel with a side port septum.

3.5 Micro spin bars.

3.6 Syringes: 5 ml (Hamilton 1005TLL), 10, 25, and 100 ul.

4. Reagents

4.1 Methanol, purge and trap grade, lot tested for presence of interfering volatile compounds.

4.2 Neat compounds, purity of 98% or better.

4.3 Reagent water (Barnstead Nanopure II water), boiled and purged if necessary, and stored in a septum bottle.

4.4 Stock standards in methanol are prepared by volume or weight from the neat compounds to the desired concentration, generally 100-200 mg/L. Portions of the stock standards are sealed in 1 ml ampules. Standards in use are kept in 1.8 ml septum vials. THe purgeable gases are purchased from Supelco, Inc., Bellefonte, PA.

4.5 Reference/internal standard: 1-chloropentane and 1,4-dichlorobutane for the HECD, and methylcyclohexane for the PID, at a concentration of approximately 25 mg/L each in methanol, stored in 7.4 ml vial.

4.6 All standards are stored at or below 4 C. The gas standard is replaced monthly, and the others are replaced at 2-3 week intervals from the sealed ampules. A new set of stock standards are prepared approximatly every three months.

5. Sample Handling

5.1 Samples should be collected and stored in glass containers with Teflon lined caps.

5.2 Samples should be stored at 4 C.

6. Interferences

6.1 Overlapping compounds may require separation on another GC column.

6.2 Cross contamination can occur if the purge vessel is not thoroughly rinsed between samples.

7. Procedure

7.1 Set the Tekmar 4000 according to the parameters listed in paragraph 2.1.

7.2 New traps must be previously conditioned one hour at 230 C. Additional conditioning may be required if a blank analysis is not acceptable.

7.3 The trap should be baked each day before the first analysis. Press the PURGE START button to allow the trap to be flushed at room temperature for a few minutes. Then use the AUTO/HOLD/STEP switch to step to the bake cycle. Return the switch to the AUTO position.

7.4 Standards

7.4.1 Fill a known volume 125 ml septum bottle completely with reagent water. Add a micro spin bar and cap the bottle.

7.4.2 Insert the needle of a 25 uL syring through the septum, then withdraw the needle. This will release any excess pressure in the bottle.

7.4.3 Using a 25 uL syringe, add appropriate volumes of the standards to the bottle. The final concentration of each of the compounds in the bottle should be 10-20 ug/L. The gas standard must be cooled with dry ice for 10 minutes prior to taking an aliquot. This standard should be kept below 0 C at all times.

7.4.4 Place the bottle on a stir plate and mix for 30-60 seconds.

7.4.5 Inject 5.0 ml of the standard into the purge vessel through the 3-way valve.

7.4.6 Inject 20.0 uL of the reference/internal standard mixture into the water through the side septum of the purge vessel. Also inject the same amount of methanol that will be used for the sample analyses. Retention times will shift when methanol is added.

7.4.7 When the trap is cool and the "Purge Ready" LED is lit, press the PURGE START button. The DESORB switch should be at "Hold".

7.4.8 At the end of the purge cycle, the "Desorb Ready" LED will light. When the GC oven has stabilized at the proper temperature, the GC will send a signal to the Tekmar 4000 and the "Desorb" LED will light.

7.4.9 Make sure the data system is ready to accept data.

7.4.10 When the desorb step is finished, the Tekmar 4000 will start the GC program and the GC will start the data system.

7.4.11 The purge vessel should be rinsed thoroughly with reagent water between samples. Replace the water vapor trap.

7.4.12 When the trap bake step is finished, the "Standby" LED will light, and the Tekmar 4000 is ready for the loading of the next sample.

7.4.13 A calibration standard and a reagent water blank must be analyzed daily.

7.5 Samples

7.5.1 Weigh approximately five grams of a representative portion of the sample into a 40 ml septum vial on a top loader balance to the nearest 0.01 g.

7.5.2 Add 20.0 ml methanol to the vial and cap. Shake the vial for one minute, then let the particulates settle for 30-60 minutes in a refrigerator at 4 C, or in a container of ice.

7.5.3 The volume of sample to analyze will depend upon the type of sample, and the detection limits desired. The analysis of most composts will use 100 ul of the extract.

7.5.4 Fill the purge vessel with 5 ml reagent water. If necessary, pre-purge the water by stepping the Tekmar 4000 to the purge mode with the sample transfer line disconnected. After 5-10 minutes, return the Tekmar 4000 to the "purge ready" mode.

7.5.3 Inject 10.0 uL of the reference/internal standard mixture into the water through the side septum of the purge vessel.

7.5.4 Follow the procedure of 7.4.7 to 7.4.12.

7.5.5 Watch the purging to make sure the sample will not foam excessively. Usually it is not serious and the foam will remain in the lower portion of the purge vessel. However, if the foam appears to be headed toward the sample line, immediately abort the purge using the AUTO/HOLD/STEP switch and remove the sample line if necessary. FAILURE TO STOP THE FOAM FROM ENTERING THE SAMPLE LINE MAY RESULT IN THE CONTAMINATION OF THE TEKMAR 4000 PLUMBING AND THE DESTRUCTION OF THE TRAP PACKING. After cleaning the purge vessel and baking the trap, re-run the sample using a smaller aliquot. If the foam was stopped before reaching the transfer line and the transfer line was not removed, let the foam break up and then re-purge the sample. Many times it will not foam as badly the second time.

8. Calculations

8.1 The data system will calculate the heights of any peaks detected.

8.2 The peaks that are identified are calculated by the data system as follows:

$$\text{ug/Kg} = \frac{\text{sample peak ht.}}{\text{Kgs of sample}} \times \frac{\text{ug standard}}{\text{Standard ht.}} \times \frac{\text{Standard I.S. ht.}}{\text{Sample I.S. ht.}}$$

9. Quality Assurance Guidelines

9.1 Every sample is spiked with an internal standard mixture to verify the integrity of the system and to adjust the calculations for the purging efficiency of samples of different matrices. The percent recoveries of these surrogate compounds are calculated for each sample and blank. The internal standards also serve as time reference peaks for the data system.

9.2 Additional duplicate and spiked samples should be analyzed routinely. See EPA Method 5030 for details on the analysis of spiked samples.

11. References

11.2 Federal Register, Vol. 49, No. 209, Oct. 26, 1984, pp. 43261-43280.

11.2 SW 846, Methods 5030, 8010, 8020.

Appendix IV

GC/MS Procedures For Extractable Organics Analyses

APPENDIX IV

GC/MS Procedures

1. Summary of Method
   - 1.1 Method 8270, taken from SW-846 (42), was used to determine the concentration of semivolatile organic compounds in methylene chloride extracts, which had been cleaned up by Gel-Permeation Chromatography Method 3620.
2. Equipment
   - 2.1 A Finnigan 4021 mass spectrometer was configured in the electron impact ionization mode. The mass spectrometer was tuned to meet standard mass spectral ion abundance criteria established by the Environmental Protection Agency (42). Tune was met daily by analysis of decafluorotriphenylphosphine (DFTPP). Hardcopy of the tune was printed out in bar graph and list form. A Nova 3 computer was interfaced to the mass spectrometer. Continuous acquisitions were obtained and stored on hard disk pack. Finnigan Target Compound Analysis (TCA) and quantitation program software Revision 4.07.82 was used along with the NBS mass spectral library.
   - 2.2 A Hewlet Packard 5970 (HD) Mass Selective Detector (MSD) interfaced to a HP 5870 gas chromatograph (GC) was operated in the electron impact mode. Data acquisition was performed by a HP 1000E series computer running the aquarious software package.
3. Standardization
   - 3.1 A calibration standard composed of the BNA Surrogate Standard Mixture, the BNA Internal Standard Mixture, and the semivolatile organic compounds (Appendix V) was injected as a daily check standard. A multiple internal standard quantitation library was built to increase the accuracy of results. The tune and daily check standard were performed every 12-hour shift.
4. Quality Control
   - 4.1 The system performance check compounds for each standard were evaluated. A minimum response factor of 0.050 was obtained or analysis was stopped and corrective action taken.
5. Qualitative and Quantitative Analysis
   - 5.1 Qualitative Analysis of an analyte is performed by a reverse library search. A single library spectrum is compared with all the unknown spectra in a given retention time window.
   - 5.2 Quantitative analysis of an analyte was based on the integrated abundance of the primary ion EICP, the internal standard and the response factors from the daily check standard.
6. Gas Chromatography System Parameter Settings
   - 6.1 Gas Chromatography Temperature Settings
     - 6.1.1 Injector 220 C
     - 6.1.2 Separator Oven 285 C
     - 6.1.3 Transfer Line 222 C
     - 6.1.4 Gas Chromatograph Temperature Program
       - 6.1.4.1 Initial Temperature Ambient for 2 minutes
       - 6.1.4.2 Ballistic Ramp to 60 C then Ramp at 4 C/min

to 270 C.
6.1.4.3 Hold at 270 C for 15 minutes.
6.2 Gas Chromatography Column Performance
6.2.1 SE-S4 Fused Silica Capillary 30 meters by 0.250 mm I.D.
6.2.2 Film Thickness 0.25 um.
6.2.3 Theoretical Plates >4000/meter
6.2.4 Coating Efficiency >95%.
6.3 Capillary Column Positioned up to Source Block
6.4 Grab Split/Sweep Valves Closed for 60 Seconds of Splitless Injection
6.5 Helium Carrier Gas Set at 16 psi Head Pressure
6.6 Silanized Injection Port Linear for Low Dead Volume and Low Bleed Septa
7. Mass Spectrometer System Parameter Settings
7.1 Mass Spectrometer Temperature Settings
7.1.1 Manifold 90 C
7.1.2 Source Block 270 C
7.2 Mass Spectrometer Source Settings
7.2.1 Electron Energy 70 Volts
7.2.2 Emission Current 0.30 Amps
7.2.3 Vacuum 10-7 Torr
7.3 Mass Spectrometer Detector and Amplifier Settings
7.3.1 Electron Multiplier - 1250 Volts
7.3.2 Dynode High Voltage 3.1 Kv
7.3.3 Preamplifier 10-7 Amps/Volt
7.4 Mass Spectrometer Scan Rate and Range
7.4.1 Sampling Up Time 0.9500 Seconds
7.4.2 Sampling Hold Time 0.0500 Seconds
7.4.3 Full Scan Mode 45 AMU to 550 AMU
7.5 Mass Spectrometer Data System
7.5.1 Minimum Peak Width 3 Millimass Units
7.5.2 A/D Threshold 2
7.5.3 Baseline 0
7.5.4 Minimum Area 3
7.5.5 Minimum Fragment Width 80%
7.6 Mass Spectrometer Lens and Quadrupole Settings
7.6.1 Lens 1, 2, 3, 4, 5, Quadrupole Offset and Offset Program Set to Meet DFTPP Tune and Sensitivity
8. Gas Chromatograph Conditions (HP)
8.1 Injection Port: 225 C
Interface Oven: 280 C
8.2 Gas Chromatograph Temperature Program
Initial Temperature: 40 C for 4.0 minutes
Ramp Rate: 10.0 C/minute
Final Temperature: 275 C for 32.5 minutes
8.3 Gas Chromatograph Column
30 meter x 0.25 mm I.D.
J&W DB-5 fused silica capillary column
Film Thickness: 0.25 um
Carrier Gas: Helium at 11 psig
Split valve closed for 1 minute during sample injection
9.0 Mass Spectrometer System Conditions (HP)
Electron Energy: 70 Volts
Scan Range: 35 to 500 AMU

Multiplier Voltage: 1274
Number of A/D Samples: 2
GC Peak Detection Threshold: 20,000 Counts
Threshold: 50 Counts
Repeller: 10.2 Volts
Ion Focus: 0 Volts
Entrance Lens: 65 MV/AMU
X-Ray: 28 Volts
AMU Gain: 125
AMU Offset: 116
Axis Gain: 116
Axis Offset: 18
Scan Cycle Time: 0.67 Sec.
Vacuum: 3.5×10^{-5} Torr

Appendix V

Reagents and Standards Sources and Descriptions

List of Standards Prepared for Compost Study

I. BNAs Matrix Spike (SW-846) in methanol consisting of:

A. Matrix Spike

		Source	Concentration (ug/mL) Lot 1	Concentration (ug/mL) Lot 2	
1.	Pentachlorophenol	(EPA)	200	200	
2.	4-nitrophenol	(EPA)	200	200	
3.	Phenol	(EPA)	40	36.8	(MCB)
4.	2-chlorophenol	(EPA)	40	56.7	(Aldrich)

B. Matrix Spike

		Source	Conc. ug/mL
1.	Acenaphthene	(Aldrich)	80
2.	Pyrene	(Chem Service)	80
3.	N-nitroso-n-propylamine	(Chem Service)	80
4.	4-chloro-3-methylphenol	(Aldrich)	80
5.	1,2,4-trichlorobenzene	(Aldrich)	80
6.	2,4-dinitrotoluene	(Aldrich)	80
7.	1,4-dichlorobenzene	(Aldrich)	80

II. BNAs Surrogate Standard Mixture (SW-846 & Method 625) in methanol consisting of:

		Source	Concentration (ug/mL) Lot 1	Concentration (ug/mL) Lot 2,3
1.	Decafluorobiphenyl	(Aldrich)	191.12	100
2.	2-fluorobiphenyl	(Aldrich)	84.25	100
3.	2-fluorophenol	(Aldrich)	343.88	100
4.	Nitrobenzene-d5	(MSD)	149.80	100
5.	Phenol-d6	(MSD)	92.80	100
6.	p-terphenyl-d14	(MSD)	85.60	100
7.	2,4,6-tribromophenol	(Aldrich)	83.95	100

III. BNAs Internal Standards Mixture (SW-846) in methylene chloride and CS2 consisting of:

		Source	Concentration (ug/mL)
1.	1,4-dichlorobenzene-d4	(MSD)	200
2.	Naphthalene-d8	(Aldrich)	200
3.	Acenaphthene-d10	(MSD)	200
4.	Phenanthrene-d10	(MSD)	200
5.	Chrysene-d12	(MSD)	200
6.	Perylene-d12	(MSD)	200

IV. Pesticide Surrogate Mixture (SW-846) in acetone consisting of:

	Source	Concentration
1. Dibutylchloroendate	(Supelco)	25.1 ug/mL
2. 2,4,5,6-tetrachloro-m-xylene	(Aldrich)	20.1 ug/mL

V. Pesticide Matrix Spike Mixture (SW-846) in methanol consisting of the following obtained from EPA as neat compounds.

	Concentration
1. Gamma-BHC (Lindane)	213 ng/mL
2. Heptachlor	208 ng/mL
3. Aldrin	200 ng/mL
4. Dieldrin	515 ng/mL
5. Endrin	516 ng/mL
6. 4,4'-DDT	491 ng/mL

VI. Pesticide Calibrating Standards Mixture - 2 mixtures prepared: one for GC/MS with methylene chloride as solvent and the other one for electron capture with hexane as solvent. Both of these consist of the following obtained from EPA as neat compounds.

	$MECl_2$	HEXANE
1. Aldrin	497.8	10.4
2. alpha-BHC	493.5	8.2
3. beta-BHC	498.0	12.2
4. delta-BHC	494.8	11.4
5. gamma-BHC	523.0	7.9
6. alpha-chlordane	495.2	19.1
7. gamma-chlordane	494.2	19.1
8. p,p'-DDD	501.5	38.3
9. o,p'-DDD	504.2	54.3
10. p,p'-DDE	497.5	24.3
11. o,p'-DDE	507.5	34.2
12. p,p'-DDT	500.2	55.1
13. o,p'-DDT	497.5	47.7
14. Dieldrin	498.0	19.9
15. Endosulfan I	1012.8	28.0
16. Endosulfan II	1014.5	50.6
17. Endosulfan Sulfate	998.5	40.0
18. Endrin	998.5	28.1
19. Endrin aldehyde	996.0	40.0
20. Heptachlor	498.0	9.5
21. Heptachlor epoxide	503.8	14.4
22. Methoxychlor	1006.8	185
23. Oxychlordane	496.8	21.7
24. trans-nonachlor	504.8	22.3

VII. Metals

Certified atomic absorption standards of 1000 mg/L each were purchased either from Fisher Scientific, J. T. Baker, or Banco. Arsenic and Selenium working standards were prepared in dilute HCl; all others in dilute HNO(3). Serial dilutions were prepared as needed for each metal; calibration is checked against EPA and In-House QA standards.

VIII. Volatile Organics

Purgeable "C" Standards were purchased from Supelco, containing bromomethane, chloroethane, chloronethane, and vinyl chloride at 200 ug/mL in methanol. All others were purchased neat from either Kodak, Aldrich, or Supelco and prepared as described in Appendix III by dilution in purge and trap grade methanol (Burdick and Jackson). Stock solutions were in the 100-200 ug/mL range, and were checked against historic calibration factors and standards purchased from Supelco. Serial dilutions were prepared daily; stock solutions, at least every three weeks.

IX. BNA Mixed Standard

A daily working solution was prepared by making a 1:10 dilution of each of the following standards.

A. Base-Neutral Mixture No. 1 from Supelco, Inc., Bellefonte, PA, each component at 200 ng/ul in methylene chloride.

1. 1-4 Dichlorobenzene
2. bis(2-chloroisopropyl)ether
3. bis(2-chloroethyl)ether
4. Nitrobenzene
5. Acenaphthylene
6. 2-6-Dinitroluene
7. 4-Bromophenylphenyl ether
8. Dimethyl phthalate
9. Di-n Butyl phthalate
10. bis(2-Ethylhexyl)phthalate
11. 3,3'-Dichlorobenzidine
12. Benzo(b)fluoranthene

B. Base-Neutral Mixture No. 2 from Supelco, each component at 200 ng/ul in methylene chloride.

1. 1,2-Dichlorobenzene
2. 1,3-Dichlorobenzene
3. Hexachlorobutadeine
4. Naphthalene
5. bix(2-Chloroethoxy)methane
6. Acenaphthene
7. Fluorene
8. 2,4-Dinitrotoluene
9. Hexachlorobenzene
10. Anthracene
11. Diethyl phthalate
12. Pyrene

13. Chrysene
14. Benz(a)anthracene
15. Dibenz(a,h)anthracene

C. Base-Neutral Mixture No. 3 from Supelco, each component at 200 ng/ul in methylene chloride.

1. Butyl benzyl phthalate
2. 2-Chloronaphthalene
3. 1,2-Diphenylhydrazine
4. Fluoranthene
5. Hexachlorocyclopentadiene
6. Hexachloroethane
7. Isophorone
8. N-Nitroso-di-n-propylamine
9. N-Nitrosodiphenylamine
10. Phenanthrene
11. 1,2,4-Trichlorobenzene

D. Base-Neutral Mixture No. 4 from Supelco, each component at 200 ng/ul in methylene chloride.

1. Benzidine
2. Benzo(a)pyrene
3. Benzo(ghi)perylene
4. Benzo(k)fluoranthene
5. 4-Chlorophenylphenyl ether
6. Indeno(1,2,4-cd)pyrene
7. N-Nitrosodimethylamine
8. Di-n-octyl phthalate

E. Phenol Mixture 604-M, Supelco, Inc., diluted 1:5 with methylene chloride to give the listed concentrations.

1.	4-Chloro-3 methylphenol	500 ng/ul
2.	2-Chlorophenol	100 ng/ul
3.	2,4-Dichlorophenol	100 ng/ul
4.	2,4-Dimethylphenol	100 ng/ul
5.	2-Nitrophenol	100 ng/ul
6.	4-Nitrophenol	500 ng/ul
7.	2,4-Dinitrophenol	300 ng/ul
8.	2-methyl-4,6-dinitrophenol	500 ng/ul
9.	Pentachlorophenol	500 ng/ul
10.	Phenol	100 ng/ul
11.	2,4,6-Trichlorophenol	300 ng/ul

F. A solution prepared from neat 1,2,3,4-Tetrachlorodibenzo(p)dioxin from Ultra Scientific, Hope, RI, prepared at 500 ng/ul in methylene chloride

G. Toxaphene stock solution was prepared from the technical grade mixture obtained from EPA: the initial concentration was 2000 ng/L in isooctane. Working standards were prepared by serial dilution with dichloromethane.

X. GPC Mix

This is a calibration standard for the gel permeation chromatography clean-up of sample extracts based on EPA Method 3640 (42). Corn Oil (Best Foods, CPC International, Inc.), pentachlorophenol (Analabs, Inc.), and bis-(2-ethylhexyl)-phthalate (Scientific Polymers) were prepared at approximately 100 mg/mL, and 2 mg/mL, respectively in dichloromethane.

Appendix VI

Quality Assurance Data

Table 1A6

QC Performance Check for Metals

Elem.	Std Conc mg/l	Dig STD 1 mg/l	Dig STD 2 mg/l	Dig STD 3 mg/l	Dig STD 4 mg/l	Average Percent Recovery	STD Dev
Sb	0.010	0.010	0.009	0.011	0.009	97.5	0.001
As	0.010	0.010	0.010	0.010	0.010	100	0.000
Ba	2.00	1.86	1.83	1.82	1.86	92.0	0.01
Be	0.50	0.44	0.46	0.47	0.47	92.0	0.01
Cd	5.00	5.07	5.01	4.94	4.95	99.7	0.06
Cr	20.0	19.8	20.1	19.6	19.9	99.1	0.2
Cu	20.0	19.9	19.8	20.0	19.9	99.5	0.1
Pb	18.0	16.8	16.9	17.4	17.3	95.0	0.3
Mn	10.0	10.2	10.2	10.2	10.1	102	0.0
Hg	0.010	0.010	0.010	0.009	0.010	97.5	0.000
Ni	20.0	20.3	20.2	19.8	19.8	100	0.3
Sc	0.010	0.010	0.010	0.011	0.011	105	0.001
Tl	0.050	0.051	0.051	0.050	0.049	100	0.001
Zn	10.0	10.2	9.9	9.8	9.8	99.2	0.2

DIG - digested

Table 2A6

Duplicate and Spike Accuracy Data for Metals on Sludge Samples

Element	Run #1 ug/g	Run #2 ug/g	Average Conc ug/g	Spike Added ug/g	Percent Recovery
Sb	6.41	5.50	5.96	6.41	84.9
As	18.7	17.5	18.1	12.8	102
Cd	2.06	2.21	2.14	1.93	93.2
Cr	43.0	45.3	44.2	42.8	90.6
Cu	226	235	230	428	93.3
Mn	316	348	332	428	91.8
Hg	1.03	1.08	1.06	2.27	85.6
Ni	7.61	8.39	8.00	8.56	90.5
Se	6.18	6.12	6.15	6.41	100
Tl	< 0.10	<0.10	<0.10	0.75	69.3
Zn	501	511	506	642	92.8

Table 2A6
(continued)

Element	Run #1 ug/g	Run #2 ug/g	Average Conc ug/g	Spike Added ug/g	Percent Recovery
Sb	5.80	5.50	5.65	2.35	88.8
As	7.59	8.03	7.80	23.5	105
Cd	15.6	15.9	15.8	18.3	92.5
Cr	210	213	212	305	99.5
Pb	151	152	152	204	100
Mn	84.7	94.9	89.8	102	98.1
Hg	1.00	1.04	1.02	0.56	89.3
Ni	66.5	68.9	67.7	61.1	97.9
Se	2.07	2.33	2.20	0.59	99.2
Ag	17.5	16.9	17.2	20.4	97.8
Tl	<0.12	<0.12	<0.12	0.74	83.0

Table 2A6
(continued)

Element	Run #1 ug/g	Run #2 ug/g	Average Conc ug/g	Spike Added ug/g	Percent Recovery
Sb	2.47	2.95	2.71	2.35	113
As	15.4	15.0	15.2	23.5	102
Cd	20.1	20.2	20.1	23.2	89.8
Cr	214	224	219	233	105
Cu	309	320	314	465	108
Pb	172	172	172	186	105
Hg	2.81	3.04	2.92	2.27	92.6
Ni	72.9	76.9	74.9	116	90.5
Se	5.54	5.28	5.41	0.59	95.9
Tl	<0.12	<0.12	<0.12	0.66	83.3
Zn	750	790	770	930	101

Table 2A6
(continued)

Element	Run #1 ug/g	Run #2 ug/g	Average Conc ug/g	Spike Added ug/g	Percent Recovery
Sb	12.0	9.17	10.5	6.67	81.6
As	18.0	15.0	16.5	66.7	100
Cd	45.9	43.7	44.8	43.5	91.1
Cr	466	451	458	435	98.6
Cu	598	569	584	870	97.7
Pb	208	186	197	304	95.3
Mn	188	182	185	217	97.9
Hg	1.18	1.20	1.19	2.67	83
Ni	162	156	159	174	89.5
Se	13.2	12.3	12.8	16.7	102
Gl	<0.81	<0.81	<0.81	5.0	116

Table 2A6
(continued)

Element	Run #1 ug/g	Run #2 ug/g	Average Conc ug/g	Spike Added ug/g	Percent Recovery
Sb	6.71	7.15	6.93	5.71	91.6
As	14.5	12.6	13.6	57.1	113
Cd	21.5	22.7	22.1	12.9	97.9
Cr	600	619	610	259	92.8
Cu	1440	1413	1426	862	91.2
Pb	448	463	456	216	91.6
Mn	168	179	174	86.2	102
Hg	1.21	1.18	1.20	1.33	90.0
Ni	362	366	364	172	94.8
Se	13.9	13.0	13.4	1.43	104
Tl	<0.81	<0.81	<0.81	5.17	90.9

Table 2A6
(continued)

Element	Run #1 ug/g	Run #2 ug/g	Average Conc ug/g	Spike Added ug/g	Percent Recovery
Sb	6.87	5.40	6.14	5.56	73.6
As	8.96	11.7	10.3	55.6	105
Cd	7.7	8.4	8.0	9.13	99.9
Cr	27.5	25.1	26.3	27.4	105
Cu	189	192	190	228	106
Pb	103	105	104	137	95.0
Hg	1.03	1.04	1.04	1.33	104
Ni	18.1	18.7	18.4	22.8	91.4
Se	5.63	5.76	5.70	1.39	89.0
Tl	<0.81	<0.81	<0.81	4.41	113
Zn	342	323	332	365	103

Table 3A6

Q.C. Performance Check for Volatile Organic Compounds

	Results (ug/L)						
	Run Number						
	1	2	3	4	5	Average % Rec	Std Dev
--PID--							
ACETONE	93.3	145	152	137	121	149	13.3
MEK	94.8	128	136	126	120	125	6.6
BENZENE	12.5	11.9	11.7	11.8	12.1	94.9	0.2
TOLUENE	12.3	11.6	11.3	11.6	11.6	93.8	0.2
CLBENZENE	13.1	12.6	12.3	12.5	12.5	95.0	0.1
ETHYLBENZ	12.3	11.7	11.7	11.4	11.76	94.6	0.1
M-DCBENZ	15.2	14.5	14.2	14.4	14.2	93.9	0.2
P-DCBENZ	16.2	17.6	17.2	17.3	17.2	107	0.2
O-DCBENZ	15.4	14.8	14.5	14.8	14.6	95.4	0.2
- -HECD- -							
CLMETHANE	15.7	16.3	14.9	16.2	16.6	101	0.8
VC	15.7	16.2	16.7	17.9	18.4	110	1.0
CLETHANE	15.7	15.7	16.3	17.4	19.0	109	1.4
1,1-DCE	11.4	10.8	11.4	11.8	12.4	101	0.7
CH2CL2	12.6	13.2	13.5	13.8	14.0	108	0.4
T-1,2-DCE	11.9	12.0	12.2	12.7	13.8	106	0.8
1,1-DCA	11.1	11.0	11.0	11.8	12.3	104	0.6
C-1,2-DEC	12.2	12.1	12.1	12.8	13.3	103	0.6
CHCL3	14.1	13.7	13.9	14.5	14.5	101	0.4
1,1,1-TCA	12.5	12.7	12.5	13.4	14.1	105	0.7
CCL4	15.0	15.5	15.7	16.4	17.2	108	0.8
1,2,-DCA	11.8	12.0	12.4	12.8	13.1	106	0.5
TCE	13.8	13.6	13.9	14.0	14.9	102	0.6
1,2-DCP	10.9	11.5	11.4	11.6	12.2	107	0.4
BRCL2CH	14.0	14.2	14.8	15.2	15.9	107	0.7
1,1,2-TCA	12.5	13.0	13.3	13.9	14.1	108	0.5
PCE	15.4	15.4	15.3	16.1	16.3	103	0.5
BR2CLCH	16.9	17.4	17.9	18.1	19.0	107	0.7
CLBENZ	13.1	13.5	13.3	14.2	14.7	106	0.6
CHBR3	20.4	22.4	22.7	23.1	14.2	113	4.3
1,1,2,2-PCA	15.0	16.2	16.2	17.2	17.5	112	0.7
M-DCBENZ	15.2	15.5	15.2	16.1	15.6	103	0.4
P-PDCBENZ	18.3	18.8	18.4	18.9	19.7	103	0.5
O-DBENZ	15.4	15.7	15.6	16.5	17.2	106	0.8

Table 4A6

Duplicate and Spike Data for Volatile Organics on Sludge Sample 28069 (IX-A-2)

Compound	Run #1 (ug/Kg)	Run #2 (ug/Kg)	Average Conc (ug/Kg)	Spike Added (ug/Kg)	Spike Percent Recovery
{HECD}					
CH2CL2	0.0	0.0	0.0	1070	69.4
CHCL3	0.0	0.0	0.0	1190	84.0
1,1,1-TCA	0.0	0.0	0.0	1060	82.2
TCE	0.0	0.0	0.0	1170	84.8
PCE	0.0	0.0	0.0	1300	79.0
CLBENZENE	0.0	0.0	0.0	1110	85.2
M-DCBENZ	0.0	0.0	0.0	772	82.5
P-DCBENZ	0.0	0.0	0.0	932	87.2
O-DCBENZ	0.0	0.0	0.0	784	86.5
{PID}					
BENZENE	0.0	0.0	0.0	1060	102
TOLUENE	0.0	0.0	0.0	1040	100
CLBENZENE	0.0	0.0	0.0	1110	97.1
ETHYLBENZ	0.0	0.0	0.0	1040	97.5

Table 4A6
(continued)

Duplicate and Spike Data for Volatile Organics on Sludge Sample 28080 (IX-A-5)

Compound	Run #1 (ug/Kg)	Run #2 (ug/Kg)	Average Conc (ug/Kg)	Spike Added (ug/Kg)	Spike Percent Recovery
{HECD}					
CLMETHANE	0.0	0.0	0.0	800	80.5
VINYL CL	0.0	0.0	0.0	800	77.3
BRMETHANE	0.0	0.0	0.0	800	73.4
CLETHANE	0.0	0.0	0.0	800	87.1
1,1-DCE	0.0	0.0	0.0	582	85.6
CH2CL2	0.0	0.0	0.0	642	81.3
T-1,2-DCE	0.0	0.0	0.0	606	85.8
1,1-DCA	0.0	0.0	0.0	563	86.8
C-1,2-DCE	0.0	0.0	0.0	618	87.7
CHCL3	0.0	0.0	0.0	714	85.9
1,1,1-TCA	0.0	0.0	0.0	636	89.2
CCL4	0.0	0.0	0.0	762	89.8
1,2-DCA	0.0	0.0	0.0	600	81.5
TCE	0.0	0.0	0.0	702	83.8
1,2-DCP	0.0	0.0	0.0	556	86.6
BRCL2CH	0.0	0.0	0.0	714	79.6
1,1,2-TCA	0.0	0.0	0.0	690	69.9
PCE	0.0	0.0	0.0	780	88.7
BR2CLCH	0.0	0.0	0.0	858	68.1
CLBENZENE	0.0	0.0	0.0	666	79.6
CHBR3	0.0	0.0	0.0	1040	62.6
1,1,2,2-PCA	0.0	0.0	0.0	762	86.6
M-DCBENZ	0.0	0.0	0.0	772	84.5
P-DCBENZ	0.0	0.0	0.0	932	85.4
O-DCBENZ	0.0	0.0	0.0	784	80.9
{PID}					
BENZENE	0.0	0.0	0.0	636	93.1
TOLUENE	0.0	0.0	0.0	624	89.7
CLBENZENE	0.0	0.0	0.0	666	86.9
ETHYLBENZ	0.0	0.0	0.0	624	90.9

Table 4A6
(continued)

Duplicate and Spike Data for Volatile Organics on Sludge Sample 30966 (X-C-1)

Compound	Run #1 (ug/Kg)	Run #2 (ug/Kg)	Average Conc (ug/Kg)	Spike Added (ug/Kg)	Spike Percent Recovery
{HECD}					
CLMETHANE	0.0	0.0	0.0	800	95.8
VINYL CL	0.0	0.0	0.0	800	81.5
BRMETHANE	0.0	0.0	0.0	800	91.8
CLETHANE	0.0	0.0	0.0	800	83.8
1,1-DCE	0.0	0.0	0.0	582	83.5
CH2CL2	0.0	0.0	0.0	642	84.1
T-1,2-DCE	0.0	0.0	0.0	606	93.6
1,1-DCA	0.0	0.0	0.0	563	85.4
C-1,2-DCE	0.0	0.0	0.0	618	86.2
CHCL3	0.0	0.0	0.0	714	90.9
1,1,1-TCA	0.0	0.0	0.0	636	91.7
CCL4	0.0	0.0	0.0	762	90.0
1,2-DCA	0.0	0.0	0.0	600	89.7
TCE	0.0	0.0	0.0	702	87.6
1,2-DCP	0.0	0.0	0.0	556	89.6
BRCL2CH	0.0	0.0	0.0	714	85.3
1,1,2-TCA	0.0	0.0	0.0	690	74.8
PCE	0.0	0.0	0.0	780	94.6
BR2CLCH	0.0	0.0	0.0	858	71.3
CLBENZENE	65.2	52.7	59.0	666	88.0
CHBR3	0.0	0.0	0.0	1038	66.1
1,1,2,2-PCA	0.0	0.0	0.0	762	97.6
M-DCBENZ	0.0	0.0	0.0	772	87.0
P-DCBENZ	0.0	0.0	0.0	932	85.3
O-DCBENZ	0.0	0.0	0.0	784	86.6
{PID}					
THF	0.0	0.0	0.0	4960	105
MEK	0.0	0.0	0.0	4560	93.4
BENZENE	0.0	0.0	0.0	636	94.7
TOLUENE	0.0	0.0	0.0	624	93.1
CLBENZENE	86.2	56.7	71.5	666	90.5
ETHYLBENZ	0.0	0.0	0.0	624	92.6
P-XYLENE	0.0	0.0	0.0	612	90.2
O-XYLENE	0.0	0.0	0.0	624	83.7

Table 4A6
(continued)

Duplicate and Spike Data for Volatile Organics on Sludge Sample 30973 (VII-A-1)

Compound	Run #1 (ug/Kg)	Run #2 (ug/Kg)	Average Conc (ug/Kg)	Spike Added (ug/Kg)	Spike Percent Recovery
{HECD}					
CLMETHANE	0.0	0.0	0.0	795	95.3
VINYL CL	0.0	0.0	0.0	795	86.4
BRMETHANE	0.0	0.0	0.0	795	90.3
CLETHANE	0.0	0.0	0.0	795	89.8
1,1-DCE	0.0	0.0	0.0	579	83.5
CH2CL2	0.0	0.0	0.0	638	80.5
T-1,2-DCE	0.0	0.0	0.0	602	98.9
1,1-DCA	0.0	0.0	0.0	560	91.4
C-1,2-DCE	0.0	0.0	0.0	614	98.8
CHCL3	0.0	0.0	0.0	710	95.7
1,1,1-TCA	0.0	0.0	0.0	632	94.1
CCL4	0.0	0.0	0.0	757	94.4
1,2-DCA	0.0	0.0	0.0	596	93.9
TCE	0.0	0.0	0.0	698	96.0
1,2-DCP	0.0	0.0	0.0	552	90.0
BRCL2CH	0.0	0.0	0.0	710	86.7
1,1,2-TCA	0.0	0.0	0.0	686	86.7
PCE	0.0	0.0	0.0	775	98.9
BR2CLCH	0.0	0.0	0.0	853	75.2
CLBENZENE	0.0	0.0	0.0	662	92.1
CHBR3	0.0	0.0	0.0	1032	72.2
1,1,2,2-PCA	0.0	0.0	0.0	757	102
M-DCBENZ	0.0	0.0	0.0	767	88.5
P-DCBENZ	0.0	0.0	0.0	926	92.1
O-DCBENZ	0.0	0.0	0.0	779	95.7
{PID}					
THF	0.0	0.0	0.0	4930	116
MEK	0.0	0.0	0.0	4533	116
BENZENE	0.0	0.0	0.0	632	101
TOLUENE	0.0	0.0	0.0	620	100
CLBENZENE	21.0	16.0	18.5	662	97.5
ETHYLBENZ	0.0	0.0	0.0	620	100
P-XYLENE	0.0	0.0	0.0	608	95.2
O-XYLENE	0.0	0.0	0.0	620	95.9

Table 5A6

Q.C. Performance Check for Pesticides and PCBs

Compound	STD Conc ug/l	% Rec Run #1	% Rec Run #2	% Rec Run #3	% Rec Run #4	Average % Rec	Standard Dev.
-BHC	8.2	95.0	83.7	86.0	90.9	88.9	5.0
-BHC	7.9	105	92.4	102	107	102	6.5
HEPTACHLOR	9.5	94.9	80.2	87.1	89.8	88.0	6.1
HEPTACHLOR EPOXIDE	14.4	97.8	84.9	86.5	92.5	90.4	5.9
ENDRIN	28.1	105	93.0	90.2	100	97.0	6.7
DIELDRIN	19.9	92.5	88.2	88.1	94.1	90.7	3.0
ALDRIN	10.4	99.2	84.2	86.3	91.0	90.2	6.6
4,4'-DDD	38.3	115	101	104	117	109	7.9
4,4'-DDE	24.3	115	95.5	94.2	104	102	9.6
4,4'-DDT	55.1	110	99.3	91.6	104	101	7.8
TOXAPHENE	1160	93.8	96.2	81.2	106	94.3	10.2
METHOXYCHLOR	185	84.0	85.9	87.1	118	93.8	16.2
PCB-1221	1710	114	107	96.7	99.8	104	7.7
PCB-1232	298	88.6	70.6	74.6	92.5	81.6	10.6
PCB-1242	400	91.9	81.7	89.7	93.3	89.2	5.2
PCB-1248	258	99.3	107	112	98.8	104	6.4
PCB-1254	338	104	72.8	101	92.0	92.4	14.0
PCB-1260	332	94.9	88.8	75.9	86.3	86.5	7.9

Table 6A6

SURROGATE RECOVERY DATA SUMMARY
GC/MS ANALYSIS of COMPOST SAMPLES

Instrument: Finnigan

Constituent	Average Recovery %	Number of Analyses	Acceptable Solid % Recovery Range for SW-846
2-Fluorophenol	72	26	25-121
Phenol-d6	71	17	24-113
Nitrobenzene-d5	76	26	23-120
Decafluorobiphenyl	74	26	______
2-Fluorobiphenyl	78	26	30-115
2,4,6 -Tribromophenol	58	26	19-122
p-Terphenyl-d14	73	17	18-137

Table 6A6 (cont'd)

SURROGATE RECOVERY DATA SUMMARY
GC/MS ANALYSIS of COMPOST SAMPLES

Instrument: HP #1 (D.C.)

Constituent	Average Recovery %	Number of Analyses	Acceptable Solid % Recovery Range for SW-846
2-Fluorophenol	39	46	25-121
Phenol-d6	40	26	24-113
Nitrobenzene-d5	41	46	23-120
Decafluorobiphenyl	39	46	------
2-Fluorobiphenyl	39	46	30-115
2,4,6-Tribromophenol	32	46	19-122
p-Terphenyl-d14	43	26	18-137

Table 7A6

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: 6-B-29 (Blank) **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	17.7	19.4	91	25-121
Phenol-d6	16.6	19.0	87	24-113
Nitrobenzene-d5	18.0	21.2	85	23-120
Decafluorobiphenyl	17.2	19.8	87	______
2-Fluorobiphenyl	15.9	19.6	81	30-115
2,4,6 -Tribromophenol	13.0	20.0	65	19-122
p-Terphenyl-d14	21.6	19.4	111	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: 7B9 (Blank) **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	12.6	19.4	65	25-121
Phenol-d6	13.2	19.0	69	24-113
Nitrobenzene-d5	15.8	21.2	75	23-120
Decafluorobiphenyl	16.2	19.8	82	______
2-Fluorobiphenyl	15.2	19.6	78	30-115
2,4,6 -Tribromophenol	4.8	20.0	24	19-122
p-Terphenyl-d14	18.9	19.4	97	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28047 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	10.2	19.4	53	25-121
Phenol-d6	12.8	19.0	67	24-113
Nitrobenzene-d5	16.5	21.2	78	23-120
Decafluorobiphenyl	14.6	19.8	74	______
2-Fluorobiphenyl	16.0	19.6	82	30-115
2,4,6 -Tribromophenol	16.1	20.0	80	19-122
p-Terphenyl-d14	12.0	19.4	62	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28048 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	9.2	19.4	47	25-121
Phenol-d6	12.6	19.0	66	24-113
Nitrobenzene-d5	15.5	21.2	73	23-120
Decafluorobiphenyl	13.3	19.8	67	______
2-Fluorobiphenyl	15.3	19.6	78	30-115
2,4,6 -Tribromophenol	18.9	20.0	94	19-122
p-Terphenyl-d14	12.4	19.4	64	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28051 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	8.1	19.4	42	25-121
Phenol-d6	8.8	19.0	46	24-113
Nitrobenzene-d5	13.0	21.2	61	23-120
Decafluorobiphenyl	11.9	19.8	61	______
2-Fluorobiphenyl	13.3	19.6	66	30-115
2,4,6 -Tribromophenol	11.5	20.0	58	19-122
p-Terphenyl-d14	8.3	19.4	43	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28055 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	12.7	19.4	66	25-121
Phenol-d6	13.3	19.0	70	24-113
Nitrobenzene-d5	17.6	21.2	83	23-120
Decafluorobiphenyl	15.4	19.8	78	______
2-Fluorobiphenyl	16.7	19.6	85	30-115
2,4,6 -Tribromophenol	16.4	20.0	82	19-122
p-Terphenyl-d14	14.6	19.4	75	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28049 **Instrument: Finnigan**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	55.6	68.8	81	25-121
Nitrobenzene-d5	21.0	30.0	70	23-120
Decafluorobiphenyl	44.4	58.7	76	______
2-Fluorobiphenyl	29.5	37.0	80	30-115
2,4,6 -Tribromophenol	60.3	198	31	19-122

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28050 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	8.9	19.4	46	25-121
Phenol-d6	11.1	19.0	59	24-113
Nitrobenzene-d5	16.6	21.2	78	23-120
Decafluorobiphenyl	15.5	19.8	78	______
2-Fluorobiphenyl	15.2	19.6	78	30-115
2,4,6 -Tribromophenol	15.8	20.0	79	19-122
p-Terphenyl-d14	11.2	19.4	58	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28056 Instrument: Finnigan

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	8.8	19.4	45	25-121
Phenol-d6	9.1	19.0	48	24-113
Nitrobenzene-d5	13.6	21.2	64	23-120
Decafluorobiphenyl	12.2	19.8	62	—
2-Fluorobiphenyl	15.3	19.6	78	30-115
2,4,6 -Tribromophenol	13.3	20.0	66	19-122
p-Terphenyl-d14	14.3	19.4	74	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30963 Instrument: Finnigan

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	47.4	68.8	69	25-121
Nitrobenzene-d5	20.8	30.0	69	23-120
Decafluorobiphenyl	33.2	58.7	57	—
2-Fluorobiphenyl	25.3	37.0	68	30-115
2,4,6 -Tribromophenol	56.5	198	28	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30964 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	8.50	19.4	44	25-121
Phenol-d6	8.84	19.0	46	24-113
Nitrobenzene-d5	11.1	21.2	52	23-120
Decafluorobiphenyl	8.73	19.8	44	______
2-Fluorobiphenyl	11.4	19.6	58	30-115
2,4,6 -Tribromophenol	10.8	20.0	54	19-122
p-Terphenyl-d14	12.1	19.4	62	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30965 **Instrument: Finnigan**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	58.1	68.8	84	25-121
Nitrobenzene-d5	27.2	30.0	91	23-120
Decafluorobiphenyl	50.0	58.7	85	______
2-Fluorobiphenyl	35.0	37.0	95	30-115
2,4,6 -Tribromophenol	71.4	198	36	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30966 **Instrument: Finnigan**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	40.5	68.8	59	25-121
Nitrobenzene-d5	18.9	30.0	63	23-120
Decafluorobiphenyl	31.1	58.7	53	______
2-Fluorobiphenyl	22.5	37.0	61	30-115
2,4,6 -Tribromophenol	46.6	198	24	19-122

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30967 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	12.4	19.4	64	25-121
Phenol-d6	11.1	19.0	58	24-113
Nitrobenzene-d5	16.3	21.2	77	23-120
Decafluorobiphenyl	16.3	19.8	82	______
2-Fluorobiphenyl	17.2	19.6	88	30-115
2,4,6 -Tribromophenol	14.4	20.0	72	19-122
p-Terphenyl-d14	15.8	19.4	81	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30968 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	13.9	19.4	72	25-121
Phenol-d6	14.8	19.0	78	24-113
Nitrobenzene-d5	17.8	21.2	84	23-120
Decafluorobiphenyl	16.4	19.8	83	______
2-Fluorobiphenyl	16.0	19.6	82	30-115
2,4,6 -Tribromophenol	16.6	20.0	83	19-122
p-Terphenyl-d14	12.2	19.4	63	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30969 Instrument: Finnigan

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	52.2	68.8	76	25-121
Nitrobenzene-d5	23.8	30.0	79	23-120
Decafluorobiphenyl	46.5	58.7	79	______
2-Fluorobiphenyl	31.4	37.0	85	30-115
2,4,6 -Tribromophenol	70.0	198	35	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30971 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	17.3	19.4	89	25-121
Phenol-d6	17.1	19.0	90	24-113
Nitrobenzene-d5	16.2	21.2	76	23-120
Decafluorobiphenyl	16.0	19.8	81	______
2-Fluorobiphenyl	15.7	19.6	80	30-115
2,4,6 -Tribromophenol	15.3	20.0	76	19-122
p-Terphenyl-d14	17.1	19.4	88	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30972 Instrument: Finnigan

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	67.0	68.8	97	25-121
Nitrobenzene-d5	26.2	30.0	87	23-120
Decafluorobiphenyl	45.8	58.7	78	______
2-Fluorobiphenyl	28.4	37.0	77	30-115
2,4,6 -Tribromophenol	77.4	198	39	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30973 Instrument: Finnigan

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	19.7	19.4	102	25-121
Phenol-d6	19.7	19.0	104	24-113
Nitrobenzene-d5	19.8	21.2	93	23-120
Decafluorobiphenyl	18.1	19.8	91	______
2-Fluorobiphenyl	15.8	19.6	81	30-115
2,4,6 -Tribromophenol	17.9	20.0	90	19-122
p-Terphenyl-d14	16.0	19.4	82	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30974 Instrument: Finnigan

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	20.2	19.4	104	25-121
Phenol-d6	19.3	19.0	102	24-113
Nitrobenzene-d5	19.8	21.2	93	23-120
Decafluorobiphenyl	12.9	19.8	65	______
2-Fluorobiphenyl	15.0	19.6	77	30-115
2,4,6 -Tribromophenol	16.8	20.0	84	19-122
p-Terphenyl-d14	15.2	19.4	78	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 32462 **Instrument: Finnigan**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	19.7	19.4	102	25-121
Phenol-d6	18.2	19.0	96	24-113
Nitrobenzene-d5	16.8	21.2	79	23-120
Decafluorobiphenyl	16.4	19.8	83	______
2-Fluorobiphenyl	14.9	19.6	76	30-115
2,4,6 -Tribromophenol	14.9	20.0	74	19-122
p-Terphenyl-d14	17.0	19.4	88	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28076 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	37.1	68.8	54	25-121
Nitrobenzene-d5	15.4	30.0	51	23-120
Decafluorobiphenyl	27.9	58.7	48	______
2-Fluorobiphenyl	16.9	37.0	46	30-115
2,4,6 -Tribromophenol	40.0	198	20	19-122

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28077 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	29.7	68.8	43	25-121
Nitrobenzene-d5	12.6	30.0	42	23-120
Decafluorobiphenyl	24.4	58.7	42	______
2-Fluorobiphenyl	10.4	37.0	28	30-115
2,4,6 -Tribromophenol	17.0	198	9	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28078 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	32.8	68.8	48	25-121
Nitrobenzene-d5	12.9	30.0	43	23-120
Decafluorobiphenyl	22.8	58.7	39	______
2-Fluorobiphenyl	14.7	37.0	40	30-115
2,4,6 -Tribromophenol	54.7	198	28	19-122

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28081 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	30.1	68.8	44	25-121
Nitrobenzene-d5	14.9	30.0	50	23-120
Decafluorobiphenyl	26.3	58.7	45	______
2-Fluorobiphenyl	16.7	37.0	45	30-115
2,4,6 -Tribromophenol	38.7	198	20	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28083 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	23.6	68.8	34	25-121
Nitrobenzene-d5	9.1	30.0	30	23-120
Decafluorobiphenyl	16.8	58.7	28	______
2-Fluorobiphenyl	10.3	37.0	28	30-115
2,4,6 -Tribromophenol	24.0	198	12	19-122

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30954 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	35.1	68.8	51	25-121
Nitrobenzene-d5	15.2	30.0	51	23-120
Decafluorobiphenyl	22.9	58.7	39	______
2-Fluorobiphenyl	17.3	37.0	47	30-115
2,4,6 -Tribromophenol	37.8	198	19	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30955 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	33.9	68.8	49	25-121
Nitrobenzene-d5	13.5	30.0	45	23-120
Decafluorobiphenyl	19.6	58.7	33	______
2-Fluorobiphenyl	17.4	37.0	47	30-115
2,4,6 -Tribromophenol	39.0	198	20	19-122

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30957 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	40.6	68.8	59	25-121
Nitrobenzene-d5	16.5	30.0	55	23-120
Decafluorobiphenyl	31.7	58.7	54	______
2-Fluorobiphenyl	19.5	37.0	53	30-115
2,4,6 -Tribromophenol	45.6	198	23	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30958 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	33.7	68.8	49	25-121
Nitrobenzene-d5	14.9	30.0	50	23-120
Decafluorobiphenyl	27.2	58.7	46	______
2-Fluorobiphenyl	16.7	37.0	45	30-115
2,4,6 -Tribromophenol	39.8	198	20	19-122

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30959 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	32.7	68.8	48	25-121
Nitrobenzene-d5	14.3	30.0	48	23-120
Decafluorobiphenyl	27.2	58.7	46	______
2-Fluorobiphenyl	15.0	37.0	40	30-115
2,4,6 -Tribromophenol	34.5	198	17	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30960 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	26.4	68.8	38	25-121
Nitrobenzene-d5	12.9	30.0	43	23-120
Decafluorobiphenyl	26.0	58.7	44	______
2-Fluorobiphenyl	15.3	37.0	41	30-115
2,4,6 -Tribromophenol	33.7	198	17	19-122

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30962 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	23.9	68.8	35	25-121
Nitrobenzene-d5	12.2	30.0	41	23-120
Decafluorobiphenyl	25.2	58.7	43	______
2-Fluorobiphenyl	9.1	37.0	25	30-115
2,4,6 -Tribromophenol	42.4	198	21	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28070 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	3.5	19.4	18	25-121
Phenol-d6	5.9	19.0	31	24-113
Nitrobenzene-d5	7.0	21.2	33	23-120
Decafluorobiphenyl	7.6	19.8	38	______
2-Fluorobiphenyl	6.7	19.6	34	30-115
2,4,6 -Tribromophenol	7.3	20.0	37	19-122
p-Terphenyl-d14	7.3	19.4	38	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28080 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	8.7	19.4	45	25-121
Phenol-d6	10.5	19.0	55	24-113
Nitrobenzene-d5	11.4	21.2	54	23-120
Decafluorobiphenyl	10.7	19.8	54	______
2-Fluorobiphenyl	10.0	19.6	51	30-115
2,4,6 -Tribromophenol	12.2	20.0	61	19-122
p-Terphenyl-d14	11.3	19.4	58	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28082 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	7.3	19.4	37	25-121
Phenol-d6	6.8	19.0	36	24-113
Nitrobenzene-d5	7.0	21.2	33	23-120
Decafluorobiphenyl	6.4	19.8	32	_____
2-Fluorobiphenyl	6.5	19.6	33	30-115
2,4,6 -Tribromophenol	8.1	20.0	40	19-122
p-Terphenyl-d14	6.0	19.4	31	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28084 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	7.3	19.4	38	25-121
Phenol-d6	7.2	19.0	38	24-113
Nitrobenzene-d5	7.7	21.2	36	23-120
Decafluorobiphenyl	6.5	19.8	33	_____
2-Fluorobiphenyl	6.7	19.6	34	30-115
2,4,6 -Tribromophenol	6.5	20.0	33	19-122
p-Terphenyl-d14	6.7	19.4	34	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28085 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	4.3	19.4	22	25-121
Phenol-d6	5.0	19.0	26	24-113
Nitrobenzene-d5	7.0	21.2	33	23-120
Decafluorobiphenyl	6.1	19.8	31	—
2-Fluorobiphenyl	6.4	19.6	32	30-115
2,4,6 -Tribromophenol	6.3	20.0	31	19-122
p-Terphenyl-d14	6.4	19.4	33	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28086 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	7.5	19.4	38	25-121
Phenol-d6	7.6	19.0	40	24-113
Nitrobenzene-d5	8.1	21.2	38	23-120
Decafluorobiphenyl	7.2	19.8	36	—
2-Fluorobiphenyl	7.2	19.6	36	30-115
2,4,6 -Tribromophenol	7.6	20.0	37	19-122
p-Terphenyl-d14	6.7	19.4	34	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28087 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	6.5	19.4	34	25-121
Phenol-d6	7.1	19.0	37	24-113
Nitrobenzene-d5	8.1	21.2	38	23-120
Decafluorobiphenyl	7.1	19.8	36	______
2-Fluorobiphenyl	7.2	19.6	37	30-115
2,4,6 -Tribromophenol	7.2	20.0	36	19-122
p-Terphenyl-d14	6.9	19.4	36	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30952 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	9.4	19.4	49	25-121
Phenol-d6	9.5	19.0	50	24-113
Nitrobenzene-d5	10.3	21.2	48	23-120
Decafluorobiphenyl	9.2	19.8	46	______
2-Fluorobiphenyl	9.6	19.6	49	30-115
2,4,6 -Tribromophenol	10.4	20.0	52	19-122
p-Terphenyl-d14	9.7	19.4	50	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30953 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	4.4	19.4	22	25-121
Phenol-d6	4.8	19.0	25	24-113
Nitrobenzene-d5	4.9	21.2	23	23-120
Decafluorobiphenyl	4.0	19.8	20	______
2-Fluorobiphenyl	4.7	19.6	24	30-115
2,4,6 -Tribromophenol	5.2	20.0	26	19-122
p-Terphenyl-d14	21.6	19.4	111	18-137

Table 7
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30956 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	9.4	19.4	48	25-121
Phenol-d6	9.5	19.0	50	24-113
Nitrobenzene-d5	9.2	21.2	43	23-120
Decafluorobiphenyl	8.3	19.8	42	______
2-Fluorobiphenyl	9.5	19.6	48	30-115
2,4,6 -Tribromophenol	9.0	20.0	45	19-122
p-Terphenyl-d14	6.2	19.4	32	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30961 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	9.7	19.4	50	25-121
Phenol-d6	9.4	19.0	50	24-113
Nitrobenzene-d5	9.5	21.2	45	23-120
Decafluorobiphenyl	9.0	19.8	46	______
2-Fluorobiphenyl	8.4	19.6	43	30-115
2,4,6 -Tribromophenol	9.7	20.0	48	19-122
p-Terphenyl-d14	8.5	19.4	44	18-137

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 30962 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	23.9	68.8	35	25-121
Nitrobenzene-d5	12.2	30.0	41	23-120
Decafluorobiphenyl	25.2	58.7	43	______
2-Fluorobiphenyl	9.1	37.0	25	30-115
2,4,6 -Tribromophenol	42.4	198	21	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28087 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	6.5	19.4	34	25-121
Phenol-d6	7.1	19.0	37	24-113
Nitrobenzene-d5	8.1	21.2	38	23-120
Decafluorobiphenyl	7.1	19.8	36	______
2-Fluorobiphenyl	7.2	19.6	37	30-115
2,4,6 -Tribromophenol	7.2	20.0	36	19-122
p-Terphenyl-d14	6.9	19.4	36	18-137

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28086 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	7.5	19.4	38	25-121
Phenol-d6	7.6	19.0	40	24-113
Nitrobenzene-d5	8.1	21.2	38	23-120
Decafluorobiphenyl	7.2	19.8	36	______
2-Fluorobiphenyl	7.2	19.6	36	30-115
2,4,6 -Tribromophenol	7.6	20.0	37	19-122
p-Terphenyl-d14	6.7	19.4	34	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28085 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	4.3	19.4	22	25-121
Phenol-d6	5.0	19.0	26	24-113
Nitrobenzene-d5	7.0	21.2	33	23-120
Decafluorobiphenyl	6.1	19.8	31	_____
2-Fluorobiphenyl	6.4	19.6	32	30-115
2,4,6 -Tribromophenol	6.3	20.0	31	19-122
p-Terphenyl-d14	6.4	19.4	33	18-137

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28084 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	7.3	19.4	38	25-121
Phenol-d6	7.2	19.0	38	24-113
Nitrobenzene-d5	7.7	21.2	36	23-120
Decafluorobiphenyl	6.5	19.8	33	_____
2-Fluorobiphenyl	6.7	19.6	34	30-115
2,4,6 -Tribromophenol	6.5	20.0	33	19-122
p-Terphenyl-d14	6.7	19.4	34	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28082 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	7.3	19.4	37	25-121
Phenol-d6	6.8	19.0	36	24-113
Nitrobenzene-d5	7.0	21.2	33	23-120
Decafluorobiphenyl	6.4	19.8	32	______
2-Fluorobiphenyl	6.5	19.6	33	30-115
2,4,6 -Tribromophenol	8.1	20.0	40	19-122
p-Terphenyl-d14	6.0	19.4	31	18-137

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28080 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	8.7	19.4	45	25-121
Phenol-d6	10.5	19.0	55	24-113
Nitrobenzene-d5	11.4	21.2	54	23-120
Decafluorobiphenyl	10.7	19.8	54	______
2-Fluorobiphenyl	10.0	19.6	51	30-115
2,4,6 -Tribromophenol	12.2	20.0	61	19-122
p-Terphenyl-d14	11.3	19.4	58	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28075 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	9.9	19.4	51	25-121
Phenol-d6	10.0	19.0	53	24-113
Nitrobenzene-d5	10.6	21.2	50	23-120
Decafluorobiphenyl	10.1	19.8	51	______
2-Fluorobiphenyl	9.0	19.6	46	30-115
2,4,6 -Tribromophenol	10.8	20.0	54	19-122
p-Terphenyl-d14	9.3	19.4	48	18-137

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28072 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	29.6	68.8	43	25-121
Nitrobenzene-d5	10.2	30.0	34	23-120
Decafluorobiphenyl	19.1	58.7	33	______
2-Fluorobiphenyl	12.9	37.0	35	30-115
2,4,6 -Tribromophenol	26.4	198	13	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28071 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	5.5	19.4	28	25-121
Phenol-d6	7.1	19.0	37	24-113
Nitrobenzene-d5	7.9	21.2	37	23-120
Decafluorobiphenyl	7.7	19.8	39	______
2-Fluorobiphenyl	7.6	19.6	39	30-115
2,4,6 -Tribromophenol	9.5	20.0	47	19-122
p-Terphenyl-d14	7.9	19.4	41	18-137

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28070 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	3.5	19.4	18	25-121
Phenol-d6	5.9	19.0	31	24-113
Nitrobenzene-d5	7.0	21.2	33	23-120
Decafluorobiphenyl	7.6	19.8	38	______
2-Fluorobiphenyl	6.7	19.6	34	30-115
2,4,6 -Tribromophenol	7.3	20.0	37	19-122
p-Terphenyl-d14	7.3	19.4	38	18-137

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28065 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	6.2	19.4	32	25-121
Phenol-d6	6.4	19.0	34	24-113
Nitrobenzene-d5	6.4	21.2	30	23-120
Decafluorobiphenyl	5.7	19.8	29	______
2-Fluorobiphenyl	6.1	19.6	31	30-115
2,4,6 -Tribromophenol	7.0	20.0	35	19-122
p-Terphenyl-d14	6.4	19.4	33	18-137

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28062 Instrument: HP #1 (D.C.)

Solid Samples Surrogate Lot #1

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	31.2	68.8	45	25-121
Nitrobenzene-d5	12.0	30.0	40	23-120
Decafluorobiphenyl	22.5	58.7	38	______
2-Fluorobiphenyl	13.7	37.0	37	30-115
2,4,6 -Tribromophenol	27.6	198	14	19-122

Table 7A6
(continued)

SW-846 and CFR-40 - BNA Surrogate Spike Recovery

Sample ID: SJO 28060 **Instrument: HP #1 (D.C.)**

Solid Samples Surrogate Lot #3

Constituent	Amount Found (mg/kg)	Amount Spiked (mg/kg)	% Recovery	Solid Recovery Range
2-Fluorophenol	4.4	19.4	22	25-121
Phenol-d6	5.4	19.0	28	24-113
Nitrobenzene-d5	6.1	21.2	29	23-120
Decafluorobiphenyl	5.6	19.8	28	______
2-Fluorobiphenyl	5.8	19.6	28	30-115
2,4,6 -Tribromophenol	6.6	20.0	30	19-122
p-Terphenyl-d14	6.6	19.4	34	18-137

Table 8A6

SW 846 GC/MS Spiking Analysis

SAMPLE ID: SJO 30970

MATRIX SPIKE

Instrument: Finnigan

Solid Samples Lot #1 Matrix Spike

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	8.1	7.0	7.6	ND	7.6	10.0	76	5-112
2-Chlorophenol	8.2	6.9	7.6	ND	7.6	10.0	76	23-134
1,4-Dichlorobenzene	8.7	7.7	8.2	ND	8.2	20.0	41	20-124
n-Nitroso-di-n-propylamine	8.9	8.6	8.8	ND	8.8	20.0	44	D-230
1,2,4-trichlorobenzene	10.4	8.7	9.6	ND	9.6	20.0	48	44-142
Acenaphthene	8.9	8.8	8.8	ND	8.8	20.0	44	33-145
2,4-Dinitrotoluene	6.0	6.3	6.2	ND	6.2	20.0	31	39-139
4-Nitrophenol	34.8	38.1	36.4	ND	36.4	50.0	73	29-182
Pentachlorophenol	47.4	45.6	46.5	ND	46.5	50.0	93	14-176
Pyrene	8.3	7.3	7.8	ND	7.8	20.0	39	52-115

Surrogate Spike

Solid Samples Lot #1 Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	55.6	47.1	55.6	52.8		68.8	77	25-121
Nitrobenzene-d5	26.6	24.2	23.7	24.8		30.0	83	23-120
Decafluorobiphenyl	53.5	48.1	50.7	50.8		58.7	87	------
2-Fluorobiphenyl	34.8	31.7	34.8	33.8		37.0	91	30-115
2,4,6-Tribromophenol	67.5	62.8	59.9	63.4		198	32	19-122

Table 8A6
(continued)

SW-846 and CFR 40 Surrogate Spike Recovery

Sample ID: SJO 28054

Instrument: Finnigan

Solid Samples Lot #3 Surrogate Spike

Constituent	Spike 1	Spike 2	Average	Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	12.4	13.1	12.8	19.4	66	25-121
Phenol-d6	10.8	13.0	11.9	19.0	63	24-113
Nitrobenzene-d5	11.8	15.2	13.5	21.2	64	23-120
Decafluorobiphenyl	12.5	12.9	12.7	19.8	65	------
2-Fluorobiphenyl	11.7	13.9	12.8	19.6	65	30-115
2,4,6-Tribromophenol	11.9	14.1	13.0	20.0	65	19-122
p-Terphenyl-d14	8.8	12.1	10.4	19.4	54	18-137

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJO 30951
Solid Samples   Lot #1 Matrix Spike

Matrix Spike

Instrument: HP #1 (D.C.)

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	6.6	6.0	6.3	ND	6.3	10.0	63	5-112
2-Chlorophenol	6.5	5.0	5.8	ND	5.8	10.0	58	23-134
1,4-Dichlorobenzene	13.2	10.2	11.7	ND	11.7	20.0	58	20-124
n-Nitroso-di-n-propylamine	13.4	14.0	13.7	ND	13.7	20.0	68	D-230
1,2,4-trichlorobenzene	14.1	13.4	13.8	ND	13.8	20.0	69	44-142
Acenaphthene	13.2	15.2	14.2	ND	14.2	20.0	71	33-145
2,4-Dinitrotoluene	11.2	12.9	12.0	ND	12.0	20.0	60	39-139
4-Nitrophenol	32.2	36.5	34.4	ND	34.4	50.0	69	29-182
Pentachlorophenol	28.4	36.8	32.6	ND	32.6	50.0	65	14-176
Pyrene	16.3	17.0	16.6	ND	16.6	20.0	83	52-115

Solid Samples Lot #1 Surrogate Spike

Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	23.1	16.6	10.0	16.6		68.8	24	25-121
Nitrobenzene-d5	10.0	9.0	4.5	7.8		30.0	26	23-120
Decafluorobiphenyl	18.7	17.1	8.9	14.9		58.7	25	------
2-Fluorobiphenyl	11.6	13.0	5.3	10.0		37.0	27	30-115
2,4,6-Tribromophenol	24.0	28.7	10.5	21.1		198	11	19-122

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJ 28079
Solid Samples   Lot #1 Matrix Spike

Matrix Spike

Instrument: H.P. #1

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	10.4	9.6	10.0	ND	10.0	10.0	100	5-112
2-Chlorophenol	10.3	9.7	10.0	ND	10.0	10.0	100	23-134
1,4-Dichlorobenzene	20.1	18.5	19.3	ND	19.3	20.0	96	20-124
n-Nitroso-di-n-propylamine	22.1	19.4	20.8	ND	20.8	20.0	104	D-230
1,2,4-trichlorobenzene	20.3	18.2	19.2	ND	19.2	20.0	96	44-142
Acenaphthene	21.3	18.8	20.0	ND	20.0	20.0	100	33-145
2,4-Dinitrotoluene	22.8	20.8	21.8	ND	21.8	20.0	109	39-139
4-Nitrophenol	55.7	47.4	51.6	ND	51.6	50.0	103	29-182
Pentachlorophenol	62.3	54.7	58.5	ND	58.5	50.0	117	14-176
Pyrene	21.3	20.4	20.8	ND	20.8	20.0	104	52-115

Solid Samples Lot #1 Surrogate Spike

Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	34.0	34.8	40.9	36.6		68.8	53	25-121
Nitrobenzene-d5	17.2	15.7	17.5	16.8		30.0	56	23-120
Decafluorobiphenyl	32.8	30.8	32.2	31.9		58.7	54	------
2-Fluorobiphenyl	19.2	17.0	19.3	18.5		37.0	50	30-115
2,4,6-Tribromophenol	45.9	39.4	46.0	43.8		198	22	19-122

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJ 28074
Solid Samples Lot #2 Matrix Spike

Matrix Spike

Instrument: H.P. #1

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	17.5	9.5	13.5	2.9	10.6	9.2	115	5-112
2-Chlorophenol	11.9	12.4	12.2	ND	12.2	14.2	86	23-134
1,4-Dichlorobenzene	16.0	17.1	16.7	ND	16.7	19.3	86	20-124
n-Nitroso-di-n-propylamine	17.9	17.0	17.4	ND	17.4	18.6	94	D-230
1,2,4-trichlorobenzene	19.2	18.5	18.8	ND	18.8	21.5	88	44-142
4-Chloro-3-methylphenol	19.4	17.8	18.6	ND	18.6	20.4	91	22-147
Acenaphthene	17.6	18.0	17.8	ND	17.8	19.3	92	33-145
2,4-Dinitrotoluene	17.9	17.0	17.4	ND	17.4	20.0	87	39-139
4-Nitrophenol	44.0	44.7	44.4	ND	44.4	51.0	87	29-182
Pentachlorophenol	53.3	49.7	51.5	ND	51.5	52.1	99	14-176
Pyrene	20.4	19.8	30.1	2.6	17.5	20.6	85	52-115

Surrogate Spike

Solid Samples Lot #3 Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	9.2	8.3	9.7	9.1		19.4	47	25-121
Phenol-d6	9.2	8.9	9.6	9.2		19.0	49	24-113
Nitrobenzene-d5	10.6	10.1	10.2	10.3		21.2	49	23-120
Decafluorobiphenyl	9.4	9.8	9.3	9.5		19.8	48	------
2-Fluorobiphenyl	9.1	8.6	8.5	8.7		19.6	44	30-115
2,4,6-Tribromophenol	11.1	10.5	10.5	10.7		20.0	54	19-122
p-Terphenyl-d14	9.3	9.1	9.0	9.1		19.4	47	18-137

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJ 28067
Solid Samples Lot #2 Matrix Spike

Matrix Spike

Instrument: H.P. #1

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	8.1	-----	------	ND	8.1	9.2	88	5-112
2-Chlorophenol	11.5	-----	-----	ND	11.5	14.2	81	23-134
1,4-Dichlorobenzene	14.4	____	____	ND	14.4	19.3	75	20-124
n-Nitroso-di-n-propylamine	17.2	____	____	ND	17.2	18.6	92	D-230
1,2,4-trichlorobenzene	15.9	____	____	ND	15.9	21.5	74	44-142
4-Chloro-3-methylphenol	18.1	____	____	ND	18.1	20.4	89	22-147
Acenaphthene	15.5	____	____	ND	15.5	19.3	80	33-145
2,4-Dinitrotoluene	16.2	____	____	ND	16.2	20.0	81	39-139
4-Nitrophenol	45.7	____	____	ND	45.7	51.0	90	29-182
Pentachlorophenol	52.3	____	____	ND	52.3	52.1	100	14-176
Pyrene	17.9	____	____	2.24	15.7	20.6	76	52-115

Solid Samples Lot #3 Surrogate Spike

Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	8.1	-----	6.8	7.4		19.4	38	25-121
Phenol-d6	8.4	-----	7.0	7.7		19.0	41	24-113
Nitrobenzene-d5	8.7	-----	7.5	8.1		21.2	38	23-120
Decafluorobiphenyl	7.7	-----	6.2	7.0		19.8	35	------
2-Fluorobiphenyl	7.9	-----	6.3	7.1		19.6	36	30-115
2,4,6-Tribromophenol	9.4	-----	6.6	8.0		52.1	40	19-122
p-Terphenyl-d14	[illegible]	-----	6.3	7.2		[illegible]	37	18-137

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJ 28069
Solid Samples Lot #2 Matrix Spike

Matrix Spike

Instrument: H.P. #1

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	5.8	6.1	6.0	ND	6.0	9.2	65	5-112
2-Chlorophenol	9.6	10.0	9.8	ND	9.8	14.2	69	23-134
1,4-Dichlorobenzene	13.7	13.3	13.5	ND	13.5	19.3	70	20-124
n-Nitroso-di-n-propylamine	15.6	15.9	15.8	ND	15.8	18.6	85	0-230
1,2,4-trichlorobenzene	15.3	15.1	15.2	ND	15.2	21.5	71	44-142
4-Chloro-3-methylphenol	16.0	12.9	14.4	ND	14.4	20.4	71	22-147
Acenaphthene	14.9	14.1	14.5	ND	14.5	19.3	75	33-145
2,4-Dinitrotoluene	14.0	15.1	14.6	ND	14.6	20.0	73	39-139
4-Nitrophenol	32.6	31.4	32.0	ND	32.0	51.0	63	29-182
Pentachlorophenol	39.6	47.6	28.6	ND	28.6	52.1	55	14-178
Pyrene	17.4	17.3	17.4	3.7	13.6	20.6	66	52-115

Surrogate Spike

Solid Samples Lot #3 Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	5.1	4.5	4.4	4.7		19.4	24	25-121
Phenol-d6	6.3	6.4	6.0	6.2		19.0	33	24-113
Nitrobenzene-d5	8.0	7.5	7.1	7.5		21.2	36	23-120
Decafluorobiphenyl	7.7	7.4	6.7	7.3		19.8	37	------
2-Fluorobiphenyl	7.4	7.3	6.3	7.2		19.6	37	30-115
2,4,6-Tribromophenol	8.3	9.2	7.5	8.3		52.1	42	19-122
p-Terphenyl-d14	7.7	7.1	6.9	7.2		20.6	37	18-137

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJ 28073
Solid Samples Lot #2 Matrix Spike

Matrix Spike

Instrument: H.P. #1

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	20.2	13.8	17.0	14.6	2.4	9.2	26	5-112
2-Chlorophenol	10.5	10.0	10.2	ND	10.2	14.2	72	23-134
1,4-Dichlorobenzene	12.6	12.1	12.4	ND	12.4	19.3	64	20-124
n-Nitroso-di-n-propylamine	14.7	14.4	14.5	ND	14.5	18.6	78	D-230
1,2,4-trichlorobenzene	14.5	13.7	14.1	ND	14.1	21.5	66	44-142
4-Chloro-3-methylphenol	14.1	13.7	13.9	ND	13.9	20.4	68	22-147
Acenaphthene	13.4	13.34	13.4	ND	13.4	19.3	69	33-145
2,4-Dinitrotoluene	13.1	12.0	12.6	ND	12.6	20.0	63	39-139
4-Nitrophenol	37.2	35.4	36.3	ND	36.3	51.0	71	29-182
Pentachlorophenol	44.5	41.0	42.8	ND	42.8	52.1	82	14-176
Pyrene	16.1	15.6	15.8	1.9	14.0	20.6	68	52-115

Surrogate Spike

Solid Samples Lot #3 Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	5.9	4.8	4.6	5.1		19.4	26	25-121
Phenol-d6	7.3	6.6	7.9	7.3		19.0	38	24-113
Nitrobenzene-d5	7.9	7.5	8.8	8.1		21.2	38	23-120
Decafluorobiphenyl	7.2	6.9	7.8	7.3		19.8	37	------
2-Fluorobiphenyl	7.4	7.1	8.4	7.6		19.6	39	30-115
2,4,6-Tribromophenol	8.0	7.6	9.9	8.5		52.1	42	19-122
p-Terphenyl-d14	7.8	7.4	8.2	7.8		20.3	41	18-137

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJ 28074
Solid Samples   Lot #2 Matrix Spike

Matrix Spike

Instrument: H.P. #1

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	17.5	9.5	13.5	2.9	10.6	9.2	115	5-112
2-Chlorophenol	11.9	12.4	12.2	ND	12.2	14.2	86	23-134
1,4-Dichlorobenzene	16.0	17.1	16.7	ND	16.7	19.3	86	20-124
n-Nitroso-di-n-propylamine	17.9	17.0	17.4	ND	17.4	18.6	94	0-230
1,2,4-trichlorobenzene	19.2	18.5	18.8	ND	18.8	21.5	88	44-142
4-Chloro-3-methylphenol	19.4	17.8	18.6	ND	18.6	20.4	91	22-147
Acenaphthene	17.6	18.0	17.8	ND	17.8	19.3	92	33-145
2,4-Dinitrotoluene	17.9	17.0	17.4	ND	17.4	20.0	87	39-139
4-Nitrophenol	44.0	44.7	44.4	ND	44.4	51.0	87	29-182
Pentachlorophenol	53.3	49.7	51.5	ND	51.5	52.1	99	14-176
Pyrene	20.4	19.8	30.1	2.8	17.5	20.6	85	52-115

Solid Samples   Lot #3 Surrogate Spike

Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	9.2	8.3	9.7	9.1		19.4	47	25-121
Phenol-d6	9.2	8.9	9.6	9.2		19.0	49	24-113
Nitrobenzene-d5	10.6	10.1	10.2	10.3		21.2	49	23-120
Decafluorobiphenyl	9.4	9.8	9.3	9.5		19.8	48	------
2-Fluorobiphenyl	9.1	8.6	8.5	8.7		19.6	44	30-115
2,4,6-Tribromophenol	11.1	10.5	10.5	10.7		20.0	54	19-122
p-Terphenyl-d14	9.2	[illegible]	9.3	[illegible]		[illegible]	47	[illegible]

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJ 28079
Solid Samples   Lot #1 Matrix Spike

Matrix Spike

Instrument: H.P. #1

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Recovery	Recovery Range
Phenol	10.4	9.6	10.0	ND	10.0	10.0	100	5-112
2-Chlorophenol	10.3	9.7	10.0	ND	10.0	10.0	100	23-134
1,4-Dichlorobenzene	20.1	18.5	19.3	ND	19.3	20.0	96	20-124
n-Nitroso-di-n-propylamine	22.1	19.4	20.8	ND	20.8	20.0	104	D-230
1,2,4-trichlorobenzene	20.3	18.2	19.2	ND	19.2	20.0	96	44-142
Acenaphthene	21.3	18.8	20.0	ND	20.0	20.0	100	33-145
2,4-Dinitrotoluene	22.8	20.8	21.8	ND	21.8	20.0	109	39-139
4-Nitrophenol	55.7	47.4	51.6	ND	51.6	50.0	103	29-182
Pentachlorophenol	62.3	54.7	58.5	ND	58.5	50.0	117	14-176
Pyrene	21.3	20.4	20.8	ND	20.8	20.0	104	52-115

Solid Samples Lot #1 Surrogate Spike

Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	34.0	34.8	40.9	36.6		68.8	53	25-121
Nitrobenzene-d5	17.2	15.7	17.5	16.8		30.0	56	23-120
Decafluorobiphenyl	32.8	30.8	32.2	31.9		58.7	54	------
2-Fluorobiphenyl	19.2	17.0	19.3	18.5		37.0	50	30-115
2,4,6-Tribromophenol	45.9	39.4	46.0	43.8		198	22	19-122

Table 8A6
(continued)

SW 846 GC/MS Spiking Analysis

Sample ID: SJO 30951 — Matrix Spike71 — Instrument: H.P. #1
Solid Samples Lot #1 Matrix Spike

Constituent	Spike 1	Spike 2	Average	Unspiked	Difference	Amount of Spike mg/kg	% Re60very	Recovery Range
Phenol	6.6	6.0	5.8	ND	6.3	10.0	63	5-112
2-Chlorophenol	6.5	5.0	5.8	ND	5.8	10.0	58	23-134
1,4-Dichlorobenzene	13.2	10.2	11.7	ND	11.7	20.0	58	20-124
n-Nitroso-di-n-propylamine	13.4	14.0	13.7	ND	13.7	20.0	68	D-230
1,2,4-trichlorobenzene	14.1	13.4	13.8	ND	13.8	20.0	69	44-142
Acenaphthene	13.2	15.2	14.2	ND	14.2	20.0	71	33-145
2,4-Dinitrotoluene	11.2	12.9	12.0	ND	12.0	20.0	60	39-139
4-Nitrophenol	32.2	36.5	34.4	ND	34.4	50.0	69	29-182
Pentachlorophenol	28.4	36.8	32.6	ND	32.6	50.0	65	14-176
Pyrene	16.3	17.0	16.6	ND	16.6	20.0	83	52-115

Surrogate Spike

Solid Samples Lot #1 Surrogate Spike

Constituent	Spike 1	Spike 2	Unspiked	Average		Amount Added mg/kg	% Recovery	Solid Recovery Range
2-Fluorophenol	23.1	16.6	10.0	16.6		68.8	24	25-121
Nitrobenzene-d5	10.0	9.0	4.5	7.8		30.0	26	23-120
Decafluorobiphenyl	18.7	17.1	8.9	14.7		38.2	25	------
2-Fluorobiphenyl	11.6	13.0	5.3	10.0		16.9	27	30-115
2,4,6-Tribromophenol	24.0	28.7	10.5	21.1		16.8	11	19-122

Appendix VII

Results of Volatile Organics Analyses

Table 1A7

Volatile Organic Compound Results
Region IX Weekly Sites

(continued)

* * * * S A M P L E T E S T R E S U L T S UG/KG WET WT. * * * *

DATE	LOG NO.	DIBROMO-CHLORO-METHANE	BROMOFORM	CHLORO-BENZENE	VINYL-CHLORIDE
01/16/86	28075	< 50	< 50	< 50	< 50
03/13/86	28076	< 50	< 50	< 50	< 50
10/02/86	30952	< 50	< 50	190	< 50
01/16/86	28065	< 50	< 50	< 50	< 50
01/16/86	28069	< 50	< 50	< 50	< 50
03/13/86	28066	< 50	< 50	< 50	< 50
01/23/86	28084	< 50	< 50	< 50	< 50
03/20/86	28085	< 50	< 50	< 50	< 50
01/16/86	28070	< 50	< 50	< 50	< 50
03/13/86	28071	< 50	< 50	< 50	< 50
01/16/86	28079	< 50	< 50	< 50	< 50
03/13/86	28080	< 50	< 50	< 50	< 50

DATE	LOG NO.	O-DICHLORO-BENZENE	M-DICHLORO-BENZENE	P-DICHLORO-BENZENE	1,1-DI-CHLOROETHANE
01/16/86	28075	< 50	< 50	< 50	< 50
03/13/86	28076	< 50	< 50	< 50	< 50
10/02/86	30952	< 50	< 50	< 50	< 50
01/16/86	28065	< 50	< 50	< 50	< 50
01/16/86	28069	< 50	< 50	< 50	< 50
03/13/86	28066	< 50	< 50	< 50	< 50
01/23/86	28084	< 50	< 50	< 50	< 50
03/20/86	28085	< 50	< 50	< 50	< 50
01/16/86	28070	< 50	< 50	< 50	< 50
03/13/86	28071	< 50	< 50	< 50	< 50
01/16/86	28079	< 50	< 50	< 50	< 50
03/13/86	28080	< 50	< 50	< 50	< 50

Table 1A7

Volatile Organic Compound Results
Region IX Weekly Sites

(continued)

* * * * S A M P L E   T E S T   R E S U L T S UG/KG WET WT. * * * * *

DATE	LOG NO.	1,1,2-TRI-CHLOROETHANE	1,2-DICHLORO ETHANE	BENZENE	TOLUENE
01/16/86	28075	< 50	< 50	< 50	< 50
03/13/86	28076	< 50	< 50	< 50	< 50
10/02/86	30952	< 50	< 50	< 50	< 50
01/16/86	28065	< 50	< 50	< 50	< 50
01/16/86	28069	< 50	< 50	< 50	< 50
03/13/86	28066	< 50	< 50	< 50	< 50
01/23/86	28084	< 50	< 50	< 50	< 50
03/20/86	28085	< 50	< 50	< 50	< 50
01/16/86	28070	< 50	< 50	< 50	< 50
03/13/86	28071	< 50	< 50	< 50	< 50
01/16/86	28079	< 50	< 50	< 50	< 50
03/13/86	28080	< 50	< 50	< 50	< 50

DATE	LOG NO.	ETHYL-BENZENE	TRANS-1,2-DICHLORO-ETHYLENE	BROMOMETHANE	CHLOROETHANE
01/16/86	28075	< 50	< 50	< 250	< 100
03/13/86	28076	< 50	< 50	< 250	< 100
10/02/86	30952	< 50	< 50	< 250	< 100
01/16/86	28065	< 50	< 50	< 250	< 100
01/16/86	28069	< 50	< 50	< 250	< 100
03/13/86	28066	< 50	< 50	< 250	< 100
01/23/86	28084	< 50	< 50	< 250	< 100
03/20/86	28085	< 50	< 50	< 250	< 100
01/16/86	28070	< 50	< 50	< 250	< 100
03/13/86	28071	< 50	< 50	< 250	< 100
01/16/86	28079	< 50	< 50	< 250	< 100
03/13/86	28080	< 50	< 50	< 250	< 100

Table 1A7

Volatile Organic Compound Results
Region IX Weekly Sites

(continued)

* * * * SAMPLE TEST RESULTS UG/KG WET WT. * * * * *

DATE	LOG NO.	2-CHLORO-ETHYLVINYL-ETHER	CHLORO-METHANE	1,2-DICHLORO PROPANE	CIS-1,3-DICHLORO-PROPENE
01/16/86	28075	< 250	< 250	< 50	< 100
03/13/86	28076	< 250	< 250	< 50	< 100
10/02/86	30952	< 250	< 250	< 50	< 100
01/16/86	28065	< 250	< 250	< 50	< 100
01/16/86	28069	< 250	< 250	< 50	< 100
03/13/86	28066	< 250	< 250	< 50	< 100
01/23/86	28084	< 250	< 250	< 50	< 100
03/20/86	28085	< 250	< 250	< 50	< 100
01/16/86	28070	< 250	< 250	< 50	< 100
03/13/86	28071	< 250	< 250	< 50	< 100
01/16/86	28079	< 250	< 250	< 50	< 100
03/13/86	28080	< 250	< 250	< 50	< 100

DATE	LOG NO.	TRANS-1,3-DICHLORO-PROPENE	1,1,2,2-TETRA-CHLOROETHANE
01/16/86	28075	< 100	< 50
03/13/86	28076	< 100	< 50
10/02/86	30952	< 100	< 50
01/16/86	28065	< 100	< 50
01/16/86	28069	< 100	< 50
03/13/86	28066	< 100	< 50
01/23/86	28084	< 100	< 50
03/20/86	28085	< 100	< 50
01/16/86	28070	< 100	< 50
03/13/86	28071	< 100	< 50
01/16/86	28079	< 100	< 50
03/13/86	28080	< 100	< 50

Table 2A7

Volatile Organic Compound Results
Region III Weekly Sites

* * * * SAMPLE TEST RESULTS UG/KG WET WT. * * * *

DATE	LOG NO.	METHYLENE CHLORIDE	CHLOROFORM	1,1,1-TRI-CHLORO-ETHANE	CARBON TETRA-CHLORIDE
01/24/86	28057	< 50	< 50	< 50	< 50
03/28/86	28058	< 50	< 50	< 50	< 50
08/04/86	28060	< 50	< 50	< 50	< 50
01/23/86	28061	< 50	< 50	< 50	< 50
04/13/86	28062	< 50	< 50	< 50	< 50

DATE	LOG NO.	1,1-DICHLORO ETHENE	TRICHLORO-ETHYLENE	TETRACHLORO-ETHYLENE	BROMODICHLORO METHANE
01/24/86	28057	< 50	< 50	< 50	< 50
03/28/86	28058	< 50	< 50	< 50	< 50
08/04/86	28060	< 50	< 50	< 50	< 50
01/23/86	28061	< 50	< 50	< 50	< 50
04/13/86	28062	< 50	< 50	< 50	< 50

DATE	LOG NO.	DIBROMO-CHLORO-METHANE	BROMOFORM	CHLORO-BENZENE	VINYL CHLORIDE
01/24/86	28057	< 50	< 50	< 50	< 50
03/28/86	28058	< 50	< 50	< 50	< 50
08/04/86	28060	< 50	< 50	< 50	< 50
01/23/86	28061	< 50	< 50	< 50	< 50
04/13/86	28062	< 50	< 50	< 50	< 50

Table 2A7

Volatile Organic Compound Results
Region III Weekly Sites

(continued)

* * * * SAMPLE TEST RESULTS UG/KG WET WT * * * *

DATE	LOG NO.	O-DICHLORO-BENZENE	M-DICHLORO-BENZENE	P-DICHLORO-BENZENE	1,1-DICHLORO-ETHANE
01/24/86	28057	< 50	< 50	< 50	< 50
03/28/86	28058	< 50	< 50	< 50	< 50
08/04/86	28060	< 50	< 50	< 50	< 50
01/23/86	28061	< 50	< 50	< 50	< 50
04/13/86	28062	< 50	< 50	< 50	< 50

DATE	LOG NO.	1,1,2-TRI-CHLORO-ETHANE	1,2-DICHLORO ETHANE	BENZENE	TOLUENE
01/24/86	28057	< 50	< 50	< 50	< 50
03/28/86	28058	< 50	< 50	< 50	86
08/04/86	28060	< 50	< 50	< 50	< 50
01/23/86	28061	< 50	< 50	< 50	< 50
04/13/86	28062	< 50	< 50	< 50	< 50

DATE	LOG NO.	ETHYL-BENZENE	TRANS-1,2-DICHLORO-ETHYLENE	BROMOMETHANE	CHLOROETHANE
01/24/86	28057	< 50	< 50	< 250	< 100
03/28/86	28058	< 50	< 50	< 250	< 100
08/04/86	28060	< 50	< 50	< 250	< 100
01/23/86	28061	< 50	< 50	< 250	< 100
04/13/86	28062	< 50	< 50	< 250	< 100

Table 2A7

Volatile Organic Compound Results
Region III Weekly Sites

(continued)

* * * * SAMPLE TEST RESULTS UG/KG WET WT * * * *

DATE	LOG NO.	2-CHLORO-ETHYLVINYL ETHER	CHLORO-METHANE	1,2-DICHLORO PROPANE	CIS-1,3-DICHLORO-PROPENE
01/24/86	28057	< 250	< 250	< 50	< 100
03/28/86	28058	< 250	< 250	< 50	< 100
08/04/86	28060	< 250	< 250	< 50	< 100
01/23/86	28061	< 250	< 250	< 50	< 100
04/13/86	28062	< 250	< 250	< 50	< 100

DATE	LOG NO.	TRANS-1,3-DICHLORO-PROPENE	1,1,2,2-TETRA CHLOROETHANE
01/24/86	28057	< 100	< 50
03/28/86	28058	< 100	< 50
08/04/86	28060	< 100	< 50
01/23/86	28061	< 100	< 50
04/13/86	28062	< 100	< 50

Table 3A7

Volatile Organic Compound Results
24 City Monthly Sites

* * * * SAMPLE TEST RESULTS UG/KG WET WT. * * * *

DATE	LOG NO.	METHYLENE CHLORIDE	CHLOROFORM	1,1,1-TRI-CHLOROETHANE	CARBON TETRA-CHLORIDE
04/28/86	28056	< 50	< 50	< 50	< 50
06/18/86	32462	< 50	< 50	< 50	< 50
04/21/86	28055	< 50	< 50	< 50	< 50
05/12/86	30972	< 50	< 50	< 50	< 50
05/12/86	30964	< 50	< 50	< 50	< 50
05/06/86	30968	< 50	< 50	60	< 50
04/21/86	28052	< 50	< 50	< 50	< 50
05/29/86	30967	< 50	< 50	< 50	< 50
04/09/86	28051	< 50	< 50	< 50	< 50
04/21/86	28053	< 50	< 50	< 50	< 50
04/07/86	28049	< 50	< 50	< 50	< 50
05/15/86	30965	< 50	< 50	< 50	< 50
05/19/86	30966	< 50	< 50	< 50	< 50
04/07/86	28046	< 50	< 50	< 50	< 50
04/14/86	28048	< 50	< 50	< 50	< 50
04/21/86	28054	< 50	< 50	< 50	< 50
06/19/86	28047	< 50	< 50	< 50	< 50
05/19/86	30973	< 50	< 50	< 50	< 50
07/14/86	30963	< 50	< 50	< 50	< 50
05/05/86	30971	< 50	< 50	< 50	< 50
05/06/86	30970	< 50	< 50	< 50	< 50
05/16/86	30974	< 50	< 50	< 50	< 50

Table 3A7

Volatile Organic Compound Results
24 City Monthly Sites

(continued)

******* SAMPLE TEST RESULTS *******

DATE	LOG NO.	1,1-DICHLORO ETHENE	TRICHLORO- ETHYLENE	TETRACHLORO- ETHYLENE	BROMODICHLORO METHANE
04/28/86	28056	< 50	< 50	< 50	< 50
06/18/86	32462	< 50	< 50	< 50	< 50
04/21/86	28055	< 50	< 50	< 50	< 50
05/12/86	30972	< 50	< 50	< 50	< 50
05/12/86	30964	< 50	< 50	< 50	< 50
05/06/86	30968	< 50	< 50	< 50	< 50
04/21/86	28052	< 50	< 50	< 50	< 50
05/29/86	30967	< 50	< 50	< 50	< 50
04/09/86	28051	< 50	< 50	< 50	< 50
04/21/86	28053	< 50	< 50	< 50	< 50
04/07/86	28049	< 50	< 50	< 50	< 50
05/15/86	30965	< 50	< 50	< 50	< 50
05/19/86	30966	< 50	< 50	< 50	< 50
04/07/86	28046	< 50	< 50	< 50	< 50
04/14/86	28048	< 50	< 50	< 50	< 50
04/21/86	28054	< 50	< 50	< 50	< 50
06/19/86	28047	< 50	< 50	< 50	< 50
05/19/86	30973	< 50	< 50	< 50	< 50
07/14/86	30963	< 50	< 50	< 50	< 50
05/05/86	30971	< 50	< 50	< 50	< 50
05/06/86	30970	< 50	< 50	< 50	< 50
05/16/86	30974	< 50	< 50	< 50	< 50

Table 3A7

Volatile Organic Compound Results
24 City Monthly Sites

(continued)

******* SAMPLE TEST RESULTS *******

DATE	LOG NO.	DIBROMO-CHLORO-METHANE	BROMOFORM	CHLORO-BENZENE	VINYL CHLORIDE
04/28/86	28056	< 50	< 50	< 50	< 50
06/18/86	32462	< 50	< 50	73	< 50
04/21/86	28055	< 50	< 50	< 50	< 50
05/12/86	30972	< 50	< 50	< 50	< 50
05/12/86	30964	< 50	< 50	< 50	< 50
05/06/86	30968	< 50	< 50	81	< 50
04/21/86	28052	< 50	< 50	< 50	< 50
05/29/86	30967	< 50	< 50	220	< 50
04/09/86	28051	< 50	< 50	< 50	< 50
04/21/86	28053	< 50	< 50	< 50	< 50
04/07/86	28049	< 50	< 50	< 50	< 50
05/15/86	30965	< 50	< 50	340	< 50
05/19/86	30966	< 50	< 50	58	< 50
04/07/86	28046	< 50	< 50	< 50	< 50
04/14/86	28048	< 50	< 50	< 50	< 50
04/21/86	28054	< 50	< 50	< 50	< 50
06/19/86	28047	< 50	< 50	< 50	< 50
05/19/86	30973	< 50	< 50	< 50	< 50
07/14/86	30963	< 50	< 50	< 50	< 50
05/05/86	30971	< 50	< 50	410	< 50
05/06/86	30970	< 50	< 50	< 50	< 50
05/16/86	30974	< 50	< 50	< 50	< 50

Table 3A7

Volatile Organic Compound Results
24 City Monthly Sites

(continued)

******* SAMPLE TEST RESULTS *******

DATE	LOG NO.	O-DICHLORO-BENZENE	M-DICHLORO-BENZENE	P-DICHLORO-BENZENE	1,1-DICHLORO-ETHANE
04/28/86	28056	< 50	< 50	< 50	< 50
06/18/86	32462	< 50	< 50	< 50	< 50
04/21/86	28055	< 50	< 50	< 50	< 50
05/12/86	30972	< 50	< 50	< 50	< 50
05/12/86	30964	< 50	< 50	< 50	< 50
05/06/86	30968	< 50	< 50	< 50	< 50
04/21/86	28052	< 50	< 50	110	< 50
05/29/86	30967	< 50	< 50	< 50	< 50
04/09/86	28051	< 50	< 50	< 50	< 50
04/21/86	28053	< 50	< 50	< 50	< 50
04/07/86	28049	< 50	< 50	< 50	< 50
05/15/86	30965	< 50	< 50	< 50	< 50
05/19/86	30966	< 50	< 50	< 50	< 50
04/07/86	28046	< 50	< 50	< 50	< 50
04/14/86	28048	< 50	< 50	< 50	< 50
04/21/86	28054	< 50	< 50	< 50	< 50
06/19/86	28047	< 50	< 50	< 50	< 50
05/19/86	30973	< 50	< 50	< 50	< 50
07/14/86	30963	< 50	< 50	< 50	< 50
05/05/86	30971	< 50	< 50	< 50	< 50
05/06/86	30970	< 50	< 50	< 50	< 50
05/16/86	30974	< 50	< 50	< 50	< 50

Table 3A7

Volatile Organic Compound Results
24 City Monthly Sites

(continued)

******* SAMPLE TEST RESULTS *******

DATE	LOG NO.	1,1,2-TRI-CHLORO-ETHANE	1,2-DICHLORO ETHANF	BENZENE	TOLUENE
04/28/86	28056	< 50	< 50	< 50	< 50
06/18/86	32462	< 50	< 50	< 50	< 50
04/21/86	28055	< 50	< 50	< 50	< 50
05/12/86	30972	< 50	< 50	< 50	< 50
05/12/86	30964	< 50	< 50	< 50	< 50
05/06/86	30968	< 50	< 50	< 50	< 50
04/21/86	28052	< 50	< 50	< 50	< 50
05/29/86	30967	< 50	< 50	< 50	< 50
04/09/86	28051	< 50	< 50	< 50	< 50
04/21/86	28053	< 50	< 50	< 50	< 50
04/07/86	28049	< 50	< 50	< 50	< 50
05/15/86	30965	< 50	< 50	< 50	< 50
05/19/86	30966	< 50	< 50	< 50	< 50
04/07/86	28046	< 50	< 50	< 50	< 50
04/14/86	28048	< 50	< 50	< 50	< 50
04/21/86	28054	< 50	< 50	< 50	< 50
06/19/86	28047	< 50	< 50	< 50	< 50
05/19/86	30973	< 50	< 50	< 50	< 50
07/14/86	30963	< 50	< 50	< 50	< 50
05/05/86	30971	< 50	< 50	< 50	< 50
05/06/86	30970	< 50	< 50	< 50	< 50
05/16/86	30974	< 50	< 50	< 50	< 50

Table 3A7

Volatile Organic Compound Results
24 City Monthly Sites

(continued)

******* SAMPLE TEST RESULTS *******

DATE	LOG NO.	ETHYL BENZENE	TRANS-1,2-DICHLORO-ETHYLENE	BROMOMETHANE	CHLOROETHANE
04/28/86	28056	< 50	< 50	< 250	< 100
06/18/86	32462	< 50	< 50	< 250	< 100
04/21/86	28055	< 50	< 50	< 250	< 100
05/12/86	30972	< 50	< 50	< 250	< 100
05/12/86	30964	< 50	< 50	< 250	< 100
05/06/86	30968	< 50	< 50	< 250	< 100
04/21/86	28052	< 50	< 50	< 250	< 100
05/29/86	30967	< 50	< 50	< 250	< 100
04/09/86	28051	< 50	< 50	< 250	< 100
04/21/86	28053	< 50	< 50	< 250	< 100
04/07/86	28049	< 50	< 50	< 250	< 100
05/15/86	30965	< 50	< 50	< 250	< 100
05/19/86	30966	< 50	< 50	< 250	< 100
04/07/86	28046	< 50	< 50	< 250	< 100
04/14/86	28048	< 50	< 50	< 250	< 100
04/21/86	28054	< 50	< 50	< 250	< 100
06/19/86	28047	< 50	< 50	< 250	< 100
05/19/86	30973	< 50	< 50	< 250	< 100
07/14/86	30963	< 50	< 50	< 250	< 100
05/05/86	30971	< 50	< 50	< 250	< 100
05/06/86	30970	< 50	< 50	< 250	< 100
05/16/86	30974	< 50	< 50	< 250	< 100

Table 3A7

Volatile Organic Compound Results
24 City Monthly Sites

(continued)

• • • • • • • SAMPLE TEST RESULTS • • • • • • •

DATE	LOG NO.	2-CHLORO-ETHYLVINYL-ETHER	CHLORO-METHANE	1,2-DICHLORO PROPANE	CIS-1,3-DICHLORO-PROPENE
04/28/86	28056	< 250	< 250	< 50	< 100
06/18/86	32462	< 250	< 250	< 50	< 100
04/21/86	28055	< 250	< 250	< 50	< 100
05/12/86	30972	< 250	< 250	< 50	< 100
05/12/86	30964	< 250	< 250	< 50	< 100
05/06/86	30968	< 250	< 250	< 50	< 100
04/21/86	28052	< 250	< 250	< 50	< 100
05/29/86	30967	< 250	< 250	< 50	< 100
04/09/86	28051	< 250	< 250	< 50	< 100
04/21/86	28053	< 250	< 250	< 50	< 100
04/07/86	28049	< 250	< 250	< 50	< 100
05/15/86	30965	< 250	< 250	< 50	< 100
05/19/86	30966	< 250	< 250	< 50	< 100
04/07/86	28046	< 250	< 250	< 50	< 100
04/14/86	28048	< 250	< 250	< 50	< 100
04/21/86	28054	< 250	< 250	< 50	< 100
06/19/86	28047	< 250	< 250	< 50	< 100
05/19/86	30973	< 250	< 250	< 50	< 100
07/14/86	30963	< 250	< 250	< 50	< 100
05/05/86	30971	< 250	< 250	< 50	< 100
05/06/86	30970	< 250	< 250	< 50	< 100
05/16/86	30974	< 250	< 250	< 50	< 100

Table 3A7

Volatile Organic Compound Results
24 City Monthly Sites

(continued)

******* SAMPLE TEST RESULTS *******

DATE	LOG NO.	TRANS-1,3-DICHLOROPROPENE	1,1,2,2-TETRACHLOROETHANE
04/28/86	28056	< 100	< 50
06/18/86	32462	< 100	< 50
04/21/86	28055	< 100	< 50
05/12/86	30972	< 100	< 50
05/12/86	30964	< 100	< 50
05/06/86	30968	< 100	< 50
04/21/86	28052	< 100	< 50
05/29/86	30967	< 100	< 50
04/09/86	28051	< 100	< 50
04/21/86	28053	< 100	< 50
04/07/86	28049	< 100	< 50
05/15/86	30965	< 100	< 50
05/19/86	30966	< 100	< 50
04/07/86	28046	< 100	< 50
04/14/86	28048	< 100	< 50
04/21/86	28054	< 100	< 50
06/19/86	28047	< 100	< 50
05/19/86	30973	< 100	< 50
07/14/86	30963	< 100	< 50
05/05/86	30971	< 100	< 50
05/06/86	30970	< 100	< 50
05/16/86	30974	< 100	< 50

Appendix VIII

GC/EC Results for Pesticides and PCBs

Table 1A8

Region IX Pesticide and PCB Results by GC/EC

• • • • SAMPLE TEST RESULTS UG/KG WET WT • •

DATE	LOG NO.	PP'-DDE	PP'-DDD	PP'-DDT	ALPHA-BHC
01/16/86	28069	107	39	< 20	< 20
05/08/86	28067	36	< 20	< 20	< 20
07/03/86	28068	59	25	< 20	< 20
01/16/86	28070	47	20	20	< 20
03/13/86	28071	47	< 20	< 20	< 20
05/08/86	28072	95	25	< 20	< 20
07/31/86	28073	60	< 20	< 20	< 20

DATE	LOG NO.	BETA-BHC	DELTA-BHC	LINDANE	HEPTACHLOR
01/16/86	28069	< 20	< 20	< 20	< 20
05/08/86	28067	< 20	< 20	< 20	< 20
07/03/86	28068	< 20	< 20	< 20	< 20
01/16/86	28070	< 20	< 20	< 20	< 20
03/13/86	28071	< 20	< 20	< 20	< 20
05/08/86	28072	< 20	< 20	< 20	< 20
07/31/86	28073	< 20	< 20	< 20	< 20

DATE	LOG NO.	HEPTACHLOR EPOXIDE	ALDRIN	DIELDRIN	TOXAPHENE
01/16/86	28069	< 20	< 20	< 20	< 2000
05/08/86	28067	< 20	< 20	< 20	< 2000
07/03/86	28068	< 20	< 20	< 20	< 2000
01/16/86	28070	< 20	< 20	< 20	< 2000
03/13/86	28071	< 20	< 20	< 20	< 2000
05/08/86	28072	< 20	< 20	< 20	< 2000
07/31/86	28073	< 20	< 20	< 20	< 2000

Table 1A8

Region IX Pesticide and PCB Results by GC/EC

(continued)

* * * * SAMPLE TEST RESULTS UG/KG WET WT * * * * *

DATE	LOG NO.	AROCLOR 1242	AROCLOR 1254	AROCLOR 1248	AROCLOR 1260
01/16/86	28069	< 200	< 200	< 200	< 200
05/08/86	28067	< 200	< 200	< 200	< 200
07/03/86	28068	< 200	< 200	< 200	< 200
01/16/86	28070	< 200	< 200	< 200	< 200
03/13/86	28071	< 200	< 200	< 200	< 200
05/08/86	28072	< 200	< 200	< 200	< 200
07/31/86	28073	< 200	< 200	250	< 200

Table 1A8

Region IX Pesticide and PCB Results by GC/EC

(continued)

* * * * SAMPLE TEST RESULTS UG/KG WET WT.* * * * *

DATE	LOG NO.	CIS-CHLORDANE	TRANS-CHLORDANE	TRANS-NONACHLOR	OXYCHLORDANE
01/16/86	28069	< 20	51	34	< 20
05/08/86	28067	< 20	23	< 20	< 20
07/03/86	28068	< 20	31	20	< 20
01/16/86	28070	< 20	< 20	< 20	< 20
03/13/86	28071	< 20	< 20	< 20	< 20
05/08/86	28072	< 20	< 20	< 20	< 20
07/31/86	28073	< 20	43	< 20	< 20

DATE	LOG NO.	TOTAL DETECTABLE CHLORDANES	ENDOSULFAN I	ENDOSULFAN II	ENDOSULFAN SULFATE
01/16/86	28069	51	< 20	< 20	< 20
05/08/86	28067	23	< 20	< 20	< 20
07/03/86	28068	31	< 20	< 20	< 20
01/16/86	28070	ND	< 20	< 20	< 20
03/13/86	28071	ND	< 20	< 20	< 20
05/08/86	28072	ND	< 20	< 20	< 20
07/31/86	28073	43	< 20	< 20	< 20

DATE	LOG NO.	ENDRIN ALDEHYDE	AROCLOR 1016	AROCLOR 1221	AROCLOR 1232
01/16/86	28069	< 20	< 1000	< 1000	< 200
05/08/86	28067	< 20	< 1000	< 1000	< 200
07/03/86	28068	< 20	< 1000	< 1000	< 200
01/16/86	28070	< 20	< 1000	< 1000	< 200
03/13/86	28071	< 20	< 1000	< 1000	< 200
05/08/86	28072	< 20	< 1000	< 1000	< 200
07/31/86	28073	< 20	< 1000	< 1000	< 200

Table 2A8

Monthly Site (8 Cities) Pesticide and PCB Results By GC/EC

**** SAMPLE TEST RESULTS UG/KG WET WT ****

DATE	LOG NO.	PP'-DDE	PP'-DDD	PP'-DDT	ALPHA-BHC
04/28/86	28056	< 20	< 20	< 20	< 20
04/21/86	28055	< 20	< 20	< 20	< 20
04/21/86	28052	53	< 20	< 20	< 20
04/09/86	28051	< 20	< 20	< 20	< 20
04/07/86	28049	72	< 20	< 20	< 20
04/07/86	28046	83	16	< 20	< 20
04/14/86	28048	22	< 20	< 20	< 20
06/19/86	28047	84	< 20	< 20	< 20

DATE	LOG NO.	BETA-BHC	DELTA-BHC	LINDANE	HEPTACHLOR
04/28/86	28056	< 20	< 20	< 20	< 20
04/21/86	28055	< 20	< 20	< 20	< 20
04/21/86	28052	< 20	< 20	< 20	< 20
04/09/86	28051	< 20	< 20	< 20	< 20
04/07/86	28049	< 20	< 20	< 20	54
04/07/86	28046	< 20	< 20	< 20	< 20
04/14/86	28048	< 20	< 20	< 20	< 20
06/19/86	28047	< 20	< 20	< 20	< 20

DATE	LOG NO.	HEPTACHLOR EPOXIDE	ALDRIN	DIELDRIN	TOXAPHENE
04/28/86	28056	< 20	< 20	< 20	< 2000
04/21/86	28055	< 20	< 20	< 20	< 2000
04/21/86	28052	< 20	< 20	< 20	< 2000
04/09/86	28051	< 20	< 20	< 20	< 2000
04/07/86	28049	< 20	< 20	< 20	< 2000
04/07/86	28046	< 20	< 20	< 20	< 2000
04/14/86	28048	< 20	< 20	< 20	< 2000
06/19/86	28047	< 20	< 20	< 20	< 2000

Table 2A8

Monthly Site (8 Cities) Pesticide and PCB Results By GC/ED

(continued)

* * * * SAMPLE TEST RESULTS UG/KG WET WT. * * * * *

DATE	LOG NO.	CIS-CHLORDANE	TRANS-CHLORDANE	TRANS-NONACHLOR	OXYCHLORDANE
04/28/86	28056	< 20	< 20	< 20	< 20
04/21/86	28055	< 20	< 20	< 20	< 20
04/21/86	28052	< 20	52	< 20	< 20
04/09/86	28051	< 20	< 20	< 20	< 20
04/07/86	28049	< 20	< 20	< 20	< 20
04/07/86	28046	< 20	< 20	< 20	< 20
04/14/86	28048	< 20	< 20	< 20	< 20
06/19/86	28047	< 20	< 20	< 20	< 20

DATE	LOG NO.	TOTAL DETECTABLE CHLORDANES	ENDOSULFAN I	ENDOSULFAN II	ENDOSULFAN SULFATE
04/28/86	28056	ND	< 20	< 20	< 20
04/21/86	28055	ND	< 20	< 20	< 20
04/21/86	28052	52	< 20	< 20	< 20
04/09/86	28051	ND	< 20	< 20	< 20
04/07/86	28049	ND	< 20	< 20	< 20
04/07/86	28046	ND	< 20	< 20	< 20
04/14/86	28048	ND	< 20	< 20	< 20
06/19/86	28047	ND	< 20	< 20	< 20

DATE	LOG NO.	ENDRIN ALDEHYDE	AROCLOR 1016	AROCLOR 1221	AROCLOR 1232
04/28/86	28056	< 20	< 1000	< 1000	< 200
04/21/86	28055	< 20	< 1000	< 1000	< 200
04/21/86	28052	< 20	< 1000	< 1000	< 200
04/09/86	28051	< 20	< 1000	< 1000	< 200
04/07/86	28049	< 20	< 1000	< 1000	< 200
04/07/86	28046	< 20	< 1000	< 1000	< 200
04/14/86	28048	< 20	< 1000	< 1000	< 200
06/19/86	28047	< 20	< 1000	< 1000	< 200

Table 2A8

Monthly Site (8 Cities) Pesticide and PCB Results By GC/EC

(continued)

* * * * SAMPLE		TEST	RESULTS	UG/KG WET WT * * * *	
DATE	LOG NO.	AROCLOR 1242	AROCLOR 1254	AROCLOR 1248	AROCLOR 1260
04/28/86	28056	< 200	< 200	< 200	< 200
04/21/86	28055	< 200	< 200	< 200	< 200
04/21/86	28052	< 200	< 200	< 200	< 200
04/09/86	28051	< 200	< 200	< 200	< 200
04/07/86	28049	< 200	< 200	850	< 200
04/07/86	28046	< 200	< 200	< 200	< 200
04/14/86	28048	< 200	< 200	< 200	< 200
06/19/86	28047	< 200	< 200	< 200	< 200

Appendix IX

GC/MS Results For Extractable Organics

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/17/87 SAMPLE #: SJ028046
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	4,800
4-Bromophenylphenylether	< 560

REPORT CONTINUED

REPORT DATE: 11/17/87 SAMPLE #: SJ028046

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 2,200
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ028047
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<250,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,500
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	272,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ028047

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ028048
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	37,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ028048

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ028049
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	38,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ028049

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ028050
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	88,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ028050

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ028051
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	2,300
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ028051

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/17/87 SAMPLE #: SJ028052
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g,h,i,)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	19,000
4-Bromophenylphenylether	< 560

REPORT CONTINUED

REPORT DATE: 11/17/87 SAMPLE #: SJ028052

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 2,200
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/17/87 SAMPLE #: SJ028053
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g,h,i,)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	270,000
4-Bromophenylphenylether	< 560

REPORT CONTINUED

REPORT DATE: 11/17/87 SAMPLE #: SJ028053

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 2,200
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/17/87 SAMPLE #: SJ028054
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	24,000
4-Bromophenylphenylether	< 560

REPORT CONTINUED

REPORT DATE: 11/17/87 SAMPLE #: SJ028054

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 2,200
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ028055
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	20,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ028055

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	5,900
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ028056
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	2,900
pp'-DDD	<	3,400
pp'-DDT	<	5,200
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	2,300
Heptachlor	<	5,600
Heptachlor Epoxide	<	5,400
Aldrin	<	2,900
Dieldrin	<	2,700
Endrin	<	18,000
Toxaphene	<	260,000
Methoxyclor	<	18,000
Total Detected PCB's		ND
Beta-BHC	<	1,900
Delta-BHC	<	3,600
cis-Chlordane	<	3,900
trans-Chlordane	<	3,700
trans-Nonachlor	<	4,700
Oxychlordane	<	3,300
Total Detected Chlordanes		ND
Endosulfan I	<	8,600
Endosulfan II	<	25,000
Endosulfan Sulfate	<	9,400
Endrin Aldehyde	<	3,300
Acenaphthene	<	110
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	2,200
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	1,100
Benzo(b)fluoranthene	<	110
Benzo(g.h.i.)perylene	<	2,200
Benzo(k)fluoranthene	<	110
Bis(2-chloro-ethoxy)methane	<	110
Bis(2-chloro-ethyl)ether	<	110
Bis(2-chloro-isopropyl)ether	<	560
Bis(2-ethyl-hexyl)phthalate		1,900
4-Bromophenylphenylether	<	560
Butylbenzyl Phthalate	<	2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ028056

COMPOUND		ug/kg
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	560
Chrysene	<	560
Dibenzo(a,h)anthracene	<	5,600
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3'-Dichlorobenzidine	<	5,600
Diethyl Phthalate	<	560
Dimethyl Phthalate	<	220
Di-n-butyl Phthalate	<	220
2,4-Dinitrotoluene	<	1,300
2,6-Dinitrotoluene	<	1,100
Di-n-octyl Phthalate	<	2,200
1,2-Diphenylhydrazine	<	220
Fluoranthene	<	560
Fluorene	<	110
Hexachlorobenzene	<	560
Hexachlorobutadiene	<	560
Hexachlorocyclopentadiene	<	1,100
Hexachloroethane	<	220
Indeno(1,2,3-c,d)pyrene	<	4,400
Isophorone	<	560
Naphthalene	<	110
Nitrobenzene	<	220
N-Nitrosodimethylamine	<	1,100
N-Nitrosodi-N-propylamine	<	1,100
Phenanthrene	<	110
Pyrene	<	560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	110
2-Chlorophenol	<	110
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	560
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	8,300
2-Methyl-4,6-dinitrophenol	<	2,800
2-Nitrophenol	<	2,800
4-Nitrophenol	<	1,100
4-Chloro-3-methylphenol	<	220
Pentachlorophenol	<	560
Phenol	<	560
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	560

SAN JOSE CREEK WATER QUALITY CONTROL LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030963
TYPE OF SAMPLE: AEROBIC/D.B.
INITIAL SAMPLE WEIGHT: 0.01 KG FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		UG/KG
pp'-DDE	<	2,900
pp'-DDD	<	3,400
pp'-DDT	<	5,200
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	2,300
Heptachlor	<	5,600
Heptachlor Epoxide	<	5,400
Aldrin	<	2,900
Dieldrin	<	2,700
Endrin	<	18,000
Toxaphene	<	259,000
Methoxyclor	<	18,000
Beta-BHC	<	1,900
Delta-BHC	<	3,600
cis-Chlordane	<	3,900
trans-Chlordane	<	3,700
trans-Nonachlor	<	4,700
Oxychlordane	<	3,300
Total Detected Chlordanes		ND
Endosulfan I	<	8,600
Endosulfan II	<	25,000
Endosulfan Sulfate	<	9,400
Endrin Aldehyde	<	3,300
Acenaphthene	<	110
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	2,200
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	1,100
Benzo(b)fluoranthene	<	110
Benzo(G.H.I)perylene	<	2,200
Benzo(k)fluoranthene	<	110
Bis(2-chloro-ethoxy)methane	<	110
Bis(2-chloro-ethyl)ether	<	110
Bis(2-chloro-isopropyl ether	<	560
Bis(2-ethyl-hexyl)phthalate		5,100
4-Bromophenylphenylether	<	560
Butylbenzyl Phthalate	<	2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030963

COMPOUND		UG/KG
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	560
Chrysene	<	560
Dibenzo(a,h)anthracene	<	5,600
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3'-Dichlorobenzidine	<	5,600
Diethyl Phthalate	<	560
Dimethyl Phthalate	<	220
Di-n-butyl Phthalate	<	220
2,4-Dinitrotoluene	<	1,300
2,6-Dinitrotoluene	<	1,100
Di-n-octyl Phthalate	<	2,200
1,2-Diphenylhydrazine	<	220
Fluoranthene	<	560
Florene	<	110
Hexachlorobenzene	<	560
Hexachlorobutadiene	<	560
Hexachlorocyclopentadiene	<	1,100
Hexachloroethane	<	220
Indeno(1,2,3-c,d)pyrene	<	4,400
Isophorone	<	560
Naphthalene	<	110
Nitrobenzene	<	220
N-Nitrosodimethylamine	<	1,100
N-Nitrosodi-N-propylamine	<	1,100
Phenanthrene	<	110
Pyrene	<	560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	110
2-Chlorophenol	<	110
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	560
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	8,300
2-Methyl-4,6-dinitrophenol	<	2,800
2-Nitrophenol	<	2,800
4-Nitrophenol	<	1,100
4-Chloro-3-methylphenol	<	220
Pentachlorophenol	<	560
Phenol	<	560
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	560
Total PCB's		ND

SAN JOSE CREEK WATER QUALITY CONTROL LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030964
TYPE OF SAMPLE: UTAH DRYING BED
INITIAL SAMPLE WEIGHT: 0.01 KG FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	UG/KG
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<259,000
Methoxyclor	< 18,000
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(G.H.I)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl ether	< 560
Bis(2-ethyl-hexyl)phthalate	3,900
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030964

COMPOUND	UG/KG
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Florene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560
Total PCB's	ND

SAN JOSE CREEK WATER QUALITY CONTROL LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030965
TYPE OF SAMPLE: DRYING BED
INITIAL SAMPLE WEIGHT: 0.01 KG FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	UG/KG
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<259,000
Methoxyclor	< 18,000
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(G.H.I)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl ether	< 560
Bis(2-ethyl-hexyl)phthalate	120,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030965

COMPOUND	UG/KG
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Florene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560
Total PCB's	ND

SAN JOSE CREEK WATER QUALITY CONTROL LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJC30966
TYPE OF SAMPLE: IN VESSEL
INITIAL SAMPLE WEIGHT: 0.01 KG FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	UG/KG
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<259,000
Methoxyclor	< 18,000
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(G.H.I)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl ether	< 560
Bis(2-ethyl-hexyl)phthalate	31,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJC30966

COMPOUND	UG/KG
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Florene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560
Total PCB's	ND

SAN JOSE CREEK WATER QUALITY CONTROL LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030967
TYPE OF SAMPLE: DRYING BED
INITIAL SAMPLE WEIGHT: 0.01 KG FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	UG/KG
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<259,000
Methoxyclor	< 18,000
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(G.H.I)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl ether	< 560
Bis(2-ethyl-hexyl)phthalate	17,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030967

COMPOUND	UG/KG
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Florene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560
Total PCB's	ND

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030968
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	40,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030968

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030969
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	40,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030969

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030970
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	2,900
pp'-DDD	<	3,400
pp'-DDT	<	5,200
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	2,300
Heptachlor	<	5,600
Heptachlor Epoxide	<	5,400
Aldrin	<	2,900
Dieldrin	<	2,700
Endrin	<	18,000
Toxaphene	<	260,000
Methoxyclor	<	18,000
Total Detected PCB's		ND
Beta-BHC	<	1,900
Delta-BHC	<	3,600
cis-Chlordane	<	3,900
trans-Chlordane	<	3,700
trans-Nonachlor	<	4,700
Oxychlordane	<	3,300
Total Detected Chlordanes		ND
Endosulfan I	<	8,600
Endosulfan II	<	25,000
Endosulfan Sulfate	<	9,400
Endrin Aldehyde	<	3,300
Acenaphthene	<	110
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	2,200
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	1,100
Benzo(b)fluoranthene	<	110
Benzo(g.h.i.)perylene	<	2,200
Benzo(k)fluoranthene	<	110
Bis(2-chloro-ethoxy)methane	<	110
Bis(2-chloro-ethyl)ether	<	110
Bis(2-chloro-isopropyl)ether	<	560
Bis(2-ethyl-hexyl)phthalate		45,000 *
4-Bromophenylphenylether	<	560
Butylbenzyl Phthalate	<	2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030970

COMPOUND		ug/kg
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	560
Chrysene	<	560
Dibenzo(a,h)anthracene	<	5,600
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3'-Dichlorobenzidine	<	5,600
Diethyl Phthalate	<	560
Dimethyl Phthalate	<	220
Di-n-butyl Phthalate	<	220
2,4-Dinitrotoluene	<	1,300
2,6-Dinitrotoluene	<	1,100
Di-n-octyl Phthalate	<	2,200
1,2-Diphenylhydrazine	<	220
Fluoranthene	<	560
Fluorene	<	110
Hexachlorobenzene	<	560
Hexachlorobutadiene	<	560
Hexachlorocyclopentadiene	<	1,100
Hexachloroethane	<	220
Indeno(1,2,3-c,d)pyrene	<	4,400
Isophorone	<	560
Naphthalene	<	110
Nitrobenzene	<	220
N-Nitrosodimethylamine	<	1,100
N-Nitrosodi-N-propylamine	<	1,100
Phenanthrene	<	110
Pyrene	<	560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	110
2-Chlorophenol	<	110
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	560
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	8,300
2-Methyl-4,6-dinitrophenol	<	2,800
2-Nitrophenol	<	2,800
4-Nitrophenol	<	1,100
4-Chloro-3-methylphenol	<	220
Pentachlorophenol	<	560
Phenol	<	560
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	560

* Ave. of Triplicates

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030971
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	42,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030971

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030972
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	14,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030972

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	430
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030973
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	69,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030973

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ030974
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	25,000
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ030974

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 10/22/87 SAMPLE #: SJ032462
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 2,900
pp'-DDD	< 3,400
pp'-DDT	< 5,200
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 2,300
Heptachlor	< 5,600
Heptachlor Epoxide	< 5,400
Aldrin	< 2,900
Dieldrin	< 2,700
Endrin	< 18,000
Toxaphene	<260,000
Methoxyclor	< 18,000
Total Detected PCB's	ND
Beta-BHC	< 1,900
Delta-BHC	< 3,600
cis-Chlordane	< 3,900
trans-Chlordane	< 3,700
trans-Nonachlor	< 4,700
Oxychlordane	< 3,300
Total Detected Chlordanes	ND
Endosulfan I	< 8,600
Endosulfan II	< 25,000
Endosulfan Sulfate	< 9,400
Endrin Aldehyde	< 3,300
Acenaphthene	< 110
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 2,200
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 1,100
Benzo(b)fluoranthene	< 110
Benzo(g.h.i.)perylene	< 2,200
Benzo(k)fluoranthene	< 110
Bis(2-chloro-ethoxy)methane	< 110
Bis(2-chloro-ethyl)ether	< 110
Bis(2-chloro-isopropyl)ether	< 560
Bis(2-ethyl-hexyl)phthalate	4,400
4-Bromophenylphenylether	< 560
Butylbenzyl Phthalate	< 2,200

REPORT CONTINUED

REPORT DATE: 10/22/87 SAMPLE #: SJ032462

COMPOUND	ug/kg
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 560
Chrysene	< 560
Dibenzo(a,h)anthracene	< 5,600
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3'-Dichlorobenzidine	< 5,600
Diethyl Phthalate	< 560
Dimethyl Phthalate	< 220
Di-n-butyl Phthalate	< 220
2,4-Dinitrotoluene	< 1,300
2,6-Dinitrotoluene	< 1,100
Di-n-octyl Phthalate	< 2,200
1,2-Diphenylhydrazine	< 220
Fluoranthene	< 560
Fluorene	< 110
Hexachlorobenzene	< 560
Hexachlorobutadiene	< 560
Hexachlorocyclopentadiene	< 1,100
Hexachloroethane	< 220
Indeno(1,2,3-c,d)pyrene	< 4,400
Isophorone	< 560
Naphthalene	< 110
Nitrobenzene	< 220
N-Nitrosodimethylamine	< 1,100
N-Nitrosodi-N-propylamine	< 1,100
Phenanthrene	< 110
Pyrene	< 560
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 110
2-Chlorophenol	< 110
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 560
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 8,300
2-Methyl-4,6-dinitrophenol	< 2,800
2-Nitrophenol	< 2,800
4-Nitrophenol	< 1,100
4-Chloro-3-methylphenol	< 220
Pentachlorophenol	< 560
Phenol	< 560
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 560

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/20/87 SAMPLE #: SJC28060
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g.h.i.)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	74,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/20/87 SAMPLE #: SJC28060

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	1,400
Pyrene	1,600
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 1,100
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/20/87 SAMPLE #: SJC28062
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g.h.i.)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	53,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/20/87 SAMPLE #: SJC28062

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	1,100
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	1,500
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 1,100
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/20/87 SAMPLE #: SJC28065
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g.h.i.)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	33,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/20/87 SAMPLE #: SJC28065

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	1,300
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 1,100
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/20/87 SAMPLE #: SJC28067
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g,h,i,)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	49,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/20/87 SAMPLE #: SJC28067

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	< 110
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 1,100
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/20/87 SAMPLE #: SJC28069
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g.h.i.)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	62,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/20/87 SAMPLE #: SJC28069

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	2,900
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	4,100
Pyrene	3,700
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 1,100
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC28070
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		63,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC28070

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene		1,700
Pyrene		2,800
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	1,100
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC28071
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		88,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC28071

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene		1,800
Pyrene		2,700
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	1,100
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC28072
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		89,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC28072

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		2,100
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	1,100
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC28073
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	< 670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g.h.i.)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	100,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC28073

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	1,900
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 1,100
Phenol	15,000
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/16/87 SAMPLE #: SJC28074
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(G.H.I)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	130,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/16/87 SAMPLE #: SJC28074

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	2,000
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	1,600
Pyrene	2,600
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 220
Phenol	2,900
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC28075
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		44,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC28075

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		2,900
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	1,100
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/16/87 SAMPLE #: SJC28076
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(G.H.I)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl ether	< 110
Bis(2-ethyl-hexyl)phthalate	40,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/16/87 SAMPLE #: SJC28076

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	1,400
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 220
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/16/87 SAMPLE #: SJC28077
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(G.H.I)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl ether	< 110
Bis(2-ethyl-hexyl)phthalate	18,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/16/87 SAMPLE #: SJC28077

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	< 110
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 220
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/17/87 SAMPLE #: SJC28078
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(G.H.I)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl ether	< 110
Bis(2-ethyl-hexyl)phthalate	31,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/17/87 SAMPLE #: SJC28078

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	3,000
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 220
Phenol	640
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/17/87 SAMPLE #: SJC28079
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(G.H.I)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl ether	< 110
Bis(2-ethyl-hexyl)phthalate	50,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/17/87 SAMPLE #: SJC28079

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	2,600
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 220
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/17/87 SAMPLE #: SJC28080
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(G.H.I)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl ether	<	110
Bis(2-ethyl-hexyl)phthalate		62,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/17/87 SAMPLE #: SJC28080

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		1,900
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/17/87　　SAMPLE #: SJC28081
INITIAL SAMPLE WEIGHT: 0.01 kg　　FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(G.H.I)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl ether	< 110
Bis(2-ethyl-hexyl)phthalate	62,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/17/87　　SAMPLE #: SJC28081

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	2,100
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 220
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC28082
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	<670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g,h,i,)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	48,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC28082

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	2,500
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	1,200
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	2,300
Pyrene	4,400
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 220
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC30951
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	< 670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g.h.i.)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	46,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC30951

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	< 110
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 220
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/20/87 SAMPLE #: SJC30952
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	< 670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g.h.i.)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	74,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/20/87 SAMPLE #: SJC30952

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	2,800
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 1,100
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC30953
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE		1,100
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		32,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC30953

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene		920
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene	<	110
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC30954
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE		1,900
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		65,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC30954

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene		1,400
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene		720
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		1,700
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC30955
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		40,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC30955

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene		1,300
Pyrene		420
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC30956
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		56,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC30956

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene	<	110
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/16/87 SAMPLE #: SJC30957
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .09 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(G.H.I)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl ether	<	110
Bis(2-ethyl-hexyl)phthalate		91,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/16/87 SAMPLE #: SJC30957

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene		3,000
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene		1,600
Pyrene		3,600
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/16/87 SAMPLE #: SJC30958
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(G.H.I)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl ether	<	110
Bis(2-ethyl-hexyl)phthalate		35,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/16/87 SAMPLE #: SJC30958

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		1,800
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC30959
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	41,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		25,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC30959

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		1,900
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	1,100
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC30960
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		68,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC30960

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene		1,800
Pyrene		3,100
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	1,100
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC30961
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		42,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC30961

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene		2,000
Pyrene		2,600
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	1,100
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/18/87 SAMPLE #: SJC30962
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND	ug/kg
pp'-DDE	< 1,000
pp'-DDD	< 1,000
pp'-DDT	< 2,000
Alpha-BHC	< 1,000
Gamma-BHC (Lindane)	< 1,000
Heptachlor	< 2,000
Heptachlor Epoxide	< 1,000
Aldrin	< 1,000
Dieldrin	< 2,000
Endrin	< 20,000
Toxaphene	< 670,000
Methoxyclor	< 2,000
Total Detected PCB's	ND
Beta-BHC	< 1,000
Delta-BHC	< 1,000
cis-Chlordane	< 2,000
trans-Chlordane	< 2,000
trans-Nonachlor	< 2,000
Oxychlordane	< 1,000
Total Detected Chlordanes	ND
Endosulfan I	< 1,000
Endosulfan II	< 20,000
Endosulfan Sulfate	< 1,000
Endrin Aldehyde	< 1,000
Acenaphthene	< 220
Acenaphthylene	< 220
Anthracene	< 110
Benzidine	< 1,100
Benzo(a)anthracene	< 220
Benzo(a)pyrene	< 330
Benzo(b)fluoranthene	< 220
Benzo(g,h,i,)perylene	< 440
Benzo(k)fluoranthene	< 220
Bis(2-chloro-ethoxy)methane	< 330
Bis(2-chloro-ethyl)ether	< 330
Bis(2-chloro-isopropyl)ether	< 110
Bis(2-ethyl-hexyl)phthalate	35,000
4-Bromophenylphenylether	< 220

REPORT CONTINUED

REPORT DATE: 11/18/87 SAMPLE #: SJC30962

COMPOUND	ug/kg
Butylbenzyl Phthalate	< 330
2-Chloronaphthalene	< 220
4-Chlorophenylphenylether	< 220
Chrysene	< 220
Dibenzo(a,h)anthracene	< 890
1,2-Dichlorobenzene	< 110
1,3-Dichlorobenzene	< 110
1,4-Dichlorobenzene	< 110
3,3-Dichlorobenzidine	< 330
Diethyl Phthalate	< 110
Dimethyl Phthalate	< 110
Di-n-butyl Phthalate	< 110
2,4-Dinitrotoluene	< 1,200
2,6-Dinitrotoluene	< 1,300
Di-n-octyl Phthalate	< 440
1,2-Diphenylhydrazine	< 110
Fluoranthene	< 110
Fluorene	< 110
Hexachlorobenzene	< 220
Hexachlorobutadiene	< 220
Hexachlorocyclopentadiene	< 1,300
Hexachloroethane	< 670
Indeno(1,2,3-c,d)pyrene	< 560
Isophorone	< 220
Naphthalene	< 110
Nitrobenzene	< 670
N-Nitrosodimethylamine	< 1,000
N-Nitrosodi-N-propylamine	< 440
Phenanthrene	< 110
Pyrene	2,900
2,3,7,8-Tetrachlorodibenzo(p)dioxin	< 220
2-Chlorophenol	< 330
1,2,4-Trichlorobenzene	< 220
2,4-Dichlorophenol	< 440
2,4-Dimethylphenol	< 560
2,4-Dinitrophenol	< 5,600
2-Methyl-4,6-dinitrophenol	< 3,600
2-Nitrophenol	< 1,000
4-Nitrophenol	< 3,100
4-Chloro-3-methylphenol	< 1,100
Pentachlorophenol	< 1,100
Phenol	< 330
2,4,6-Trichlorophenol	< 330
N-Nitrosodiphenylamine	< 110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC28087
TYPE OF SAMPLE: KELLOG's GROMULCH
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	1,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		38,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC28087

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene		2,200
Pyrene		2,800
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methlyphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC28086
TYPE OF SAMPLE: KELLOG'S GROWMULCH
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		20,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC28086

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	550
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene	<	110
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	550
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC28085
TYPE OF SAMPLE: KELLOG'S GROMULCH
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		25,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC28085

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		1,100
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/13/87 SAMPLE #: SJC28084
TYPE OF SAMPLE: KELLOG'S GROMULCH
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		20,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/13/87 SAMPLE #: SJC28084

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		1,600
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

SAN JOSE CREEK WATER QUALITY LABORATORY

Report of Analysis by GC/MS for the Compost Project

REPORT DATE: 11/12/87 SAMPLE #: SJC28083
TYPE OF SAMPLE: KELLOG'S TOPPER
INITIAL SAMPLE WEIGHT: 0.01 kg FINAL VOLUME: 10.0 ml
AMOUNT INJECTED: .90 ul

COMPOUND		ug/kg
pp'-DDE	<	1,000
pp'-DDD	<	1,000
pp'-DDT	<	2,000
Alpha-BHC	<	1,000
Gamma-BHC (Lindane)	<	1,000
Heptachlor	<	2,000
Heptachlor Epoxide	<	1,000
Aldrin	<	1,000
Dieldrin	<	2,000
Endrin	<	20,000
Toxaphene	<	670,000
Methoxyclor	<	2,000
Total Detected PCB's		ND
Beta-BHC	<	1,000
Delta-BHC	<	1,000
cis-Chlordane	<	2,000
trans-Chlordane	<	2,000
trans-Nonachlor	<	2,000
Oxychlordane	<	1,000
Total Detected Chlordanes		ND
Endosulfan I	<	1,000
Endosulfan II	<	20,000
Endosulfan Sulfate	<	1,000
Endrin Aldehyde	<	1,000
Acenaphthene	<	220
Acenaphthylene	<	220
Anthracene	<	110
Benzidine	<	1,100
Benzo(a)anthracene	<	220
Benzo(a)pyrene	<	330
Benzo(b)fluoranthene	<	220
Benzo(g.h.i.)perylene	<	440
Benzo(k)fluoranthene	<	220
Bis(2-chloro-ethoxy)methane	<	330
Bis(2-chloro-ethyl)ether	<	330
Bis(2-chloro-isopropyl)ether	<	110
Bis(2-ethyl-hexyl)phthalate		45,000
4-Bromophenylphenylether	<	220

REPORT CONTINUED

REPORT DATE: 11/12/87 SAMPLE #: SJC28083

COMPOUND		ug/kg
Butylbenzyl Phthalate	<	330
2-Chloronaphthalene	<	220
4-Chlorophenylphenylether	<	220
Chrysene	<	220
Dibenzo(a,h)anthracene	<	890
1,2-Dichlorobenzene	<	110
1,3-Dichlorobenzene	<	110
1,4-Dichlorobenzene	<	110
3,3-Dichlorobenzidine	<	330
Diethyl Phthalate	<	110
Dimethyl Phthalate	<	110
Di-n-butyl Phthalate	<	110
2,4-Dinitrotoluene	<	1,200
2,6-Dinitrotoluene	<	1,300
Di-n-octyl Phthalate	<	440
1,2-Diphenylhydrazine	<	110
Fluoranthene	<	110
Fluorene	<	110
Hexachlorobenzene	<	220
Hexachlorobutadiene	<	220
Hexachlorocyclopentadiene	<	1,300
Hexachloroethane	<	670
Indeno(1,2,3-c,d)pyrene	<	560
Isophorone	<	220
Naphthalene	<	110
Nitrobenzene	<	670
N-Nitrosodimethylamine	<	1,000
N-Nitrosodi-N-propylamine	<	440
Phenanthrene	<	110
Pyrene		2,600
2,3,7,8-Tetrachlorodibenzo(p)dioxin	<	220
2-Chlorophenol	<	330
1,2,4-Trichlorobenzene	<	220
2,4-Dichlorophenol	<	440
2,4-Dimethylphenol	<	560
2,4-Dinitrophenol	<	5,600
2-Methyl-4,6-dinitrophenol	<	3,600
2-Nitrophenol	<	1,000
4-Nitrophenol	<	3,100
4-Chloro-3-methylphenol	<	1,100
Pentachlorophenol	<	220
Phenol	<	330
2,4,6-Trichlorophenol	<	330
N-Nitrosodiphenylamine	<	110

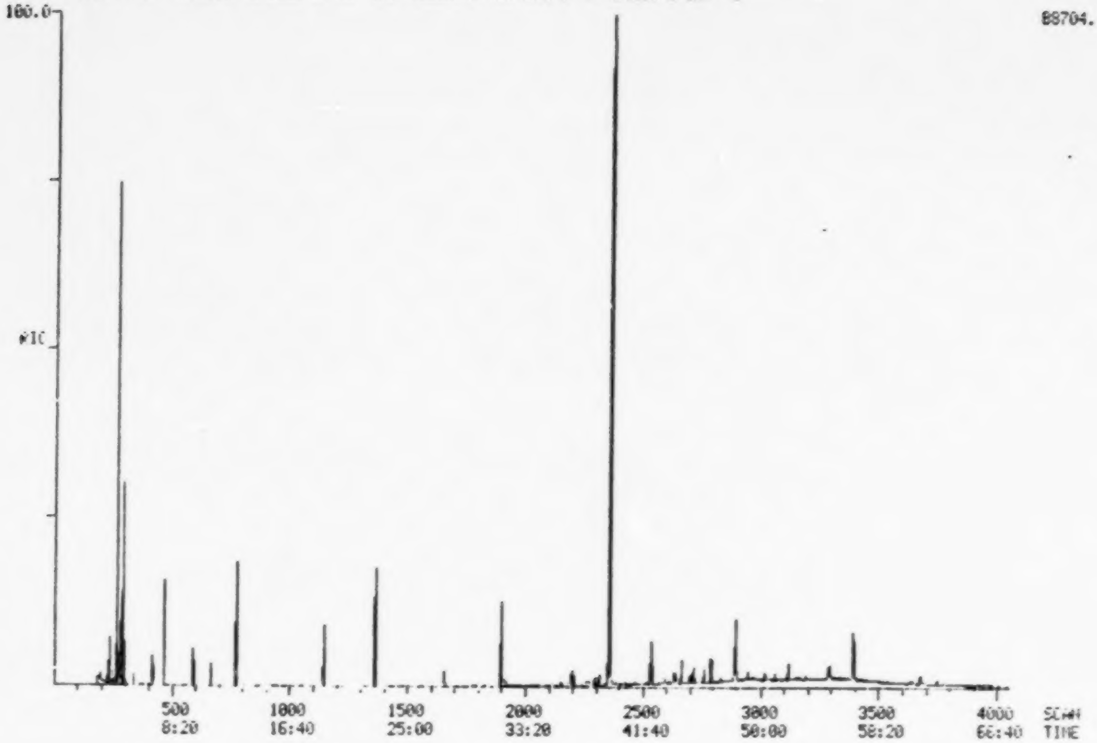
Appendix X

GC/MS Characterizations of Sludge Extracts From 26 Cities

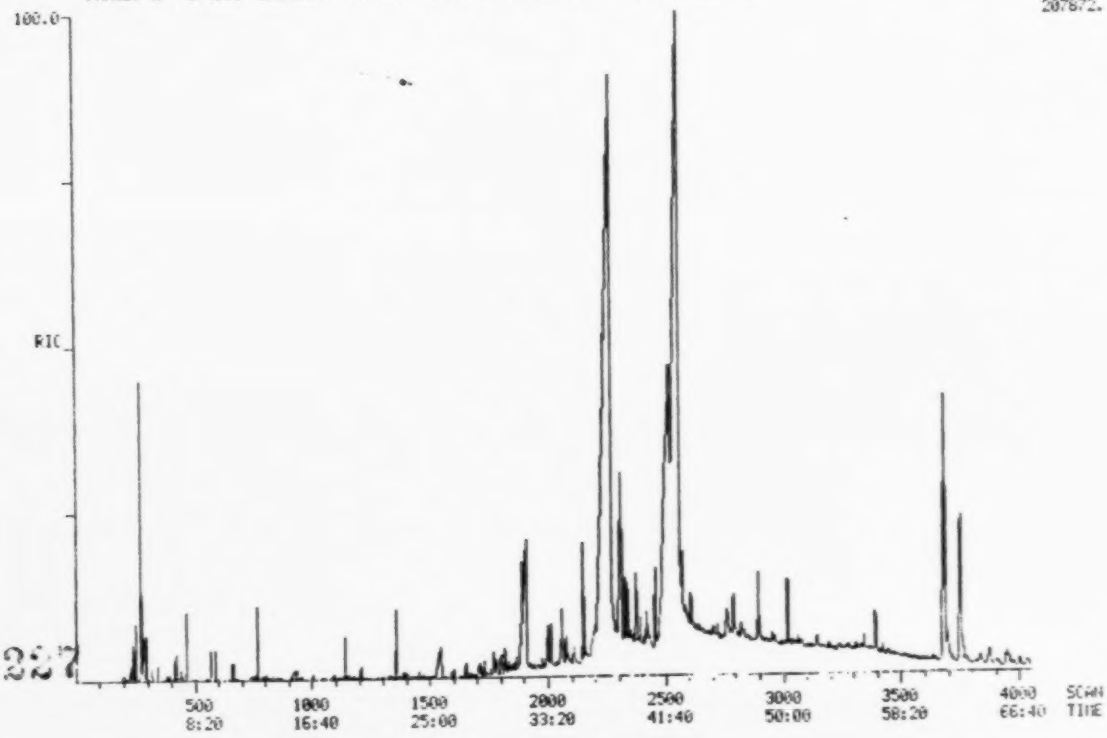
Mass Spectral Search Information

Each RIC was examined for complexity, presence of chromatographic "hump", "cleanliness" of the peak, presence of co-eluting compounds, and background. Data system displays of enhanced and unenhanced spectra of desired components were visually checked and printed. Major ions were selected for EICP: EICP for several consecutive scans were compared for peak co-elution. Library searches of the NBS library were conducted with the data system. The best five "hits" were checked for plausibility based on Fit, Purity, Refit; the three best spectra from the library were displayed with the sample peak spectrum (corrected or background subtracted). This visual display was checked for absence of ions or presence of "extra" ions compared to the best hits. If plausibility remained, tentative compound class was assigned. If not, peak was labelled "unknown".

```
RIC                                          DATA: SJ028056 #3950       SCANS    1 TO 4050
08/26/87 14:12:00                            CALI: C0701872 #4
SAMPLE:                I-B-1                   STATIC PILE
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



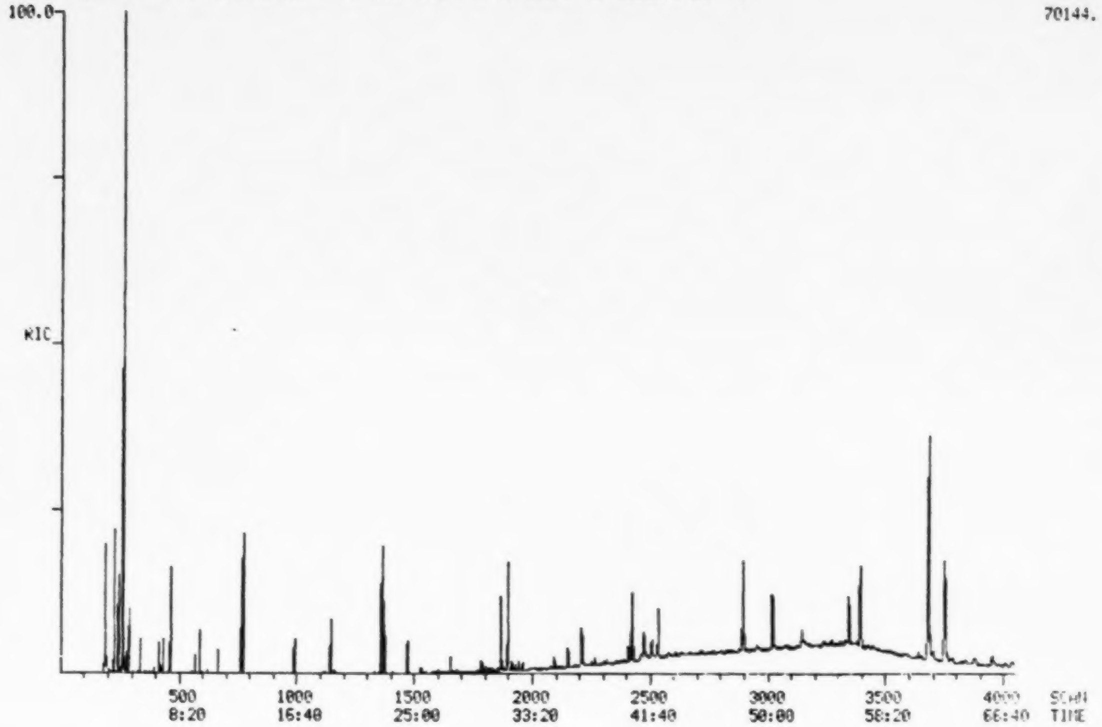
```
RIC                                          DATA: SJ028055 #3951       SCANS    1 TO 4050
08/26/87 12:11:00                            CALI: C0701872 #4
SAMPLE:                II-C-1                        IN-VESSEL
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



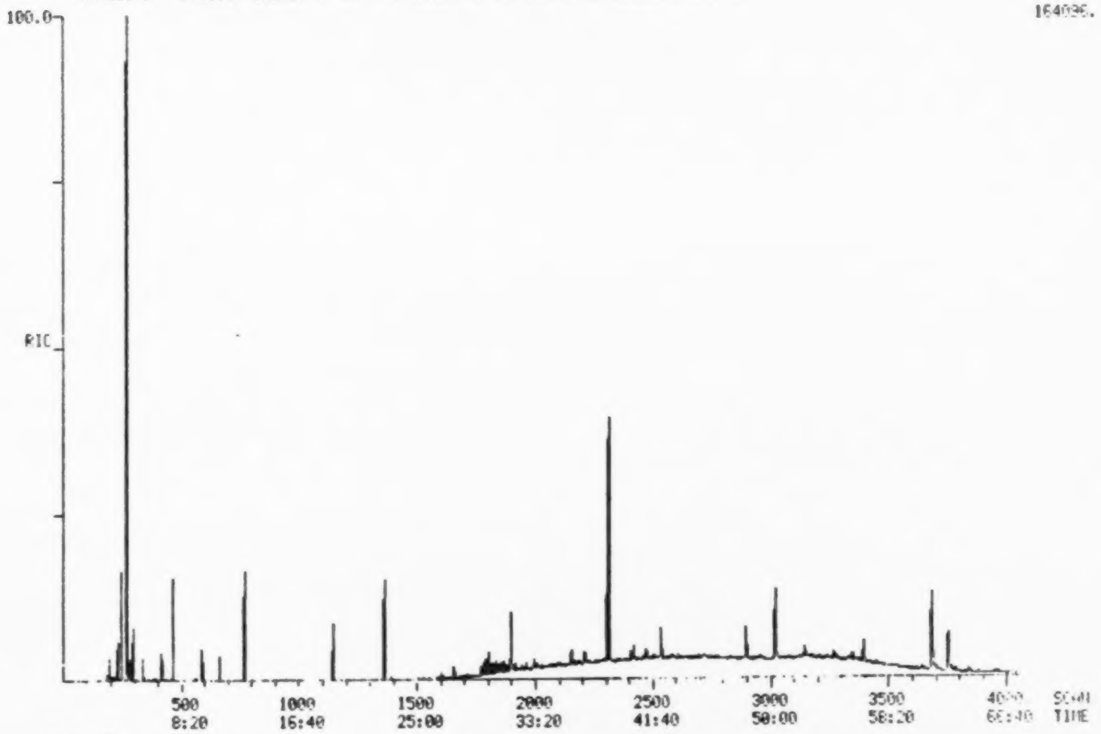
Mass Spectral Search Information

Each RIC was examined for complexity, presence of chromatographic "hump", "cleanliness" of the peak, presence of co-eluting compounds, and background. Data system displays of enhanced and unenhanced spectra of desired components were visually checked and printed. Major ions were selected for display of extracted ion current profiles (EICP): EICP for several consecutive scans were compared for peak co-elution. Library searches of the NBS library were conducted with the data system. The best five "hits" were checked for plausibility based on Fit, Purity, Refit; the three best spectra from the library were displayed with the sample peak spectrum (corrected or background subtracted). This visual display was checked for absence of ions or presence of "extra" ions compared to the best hits. If plausibility remained, tentative compound class was assigned. If not, peak was labelled "unknown".

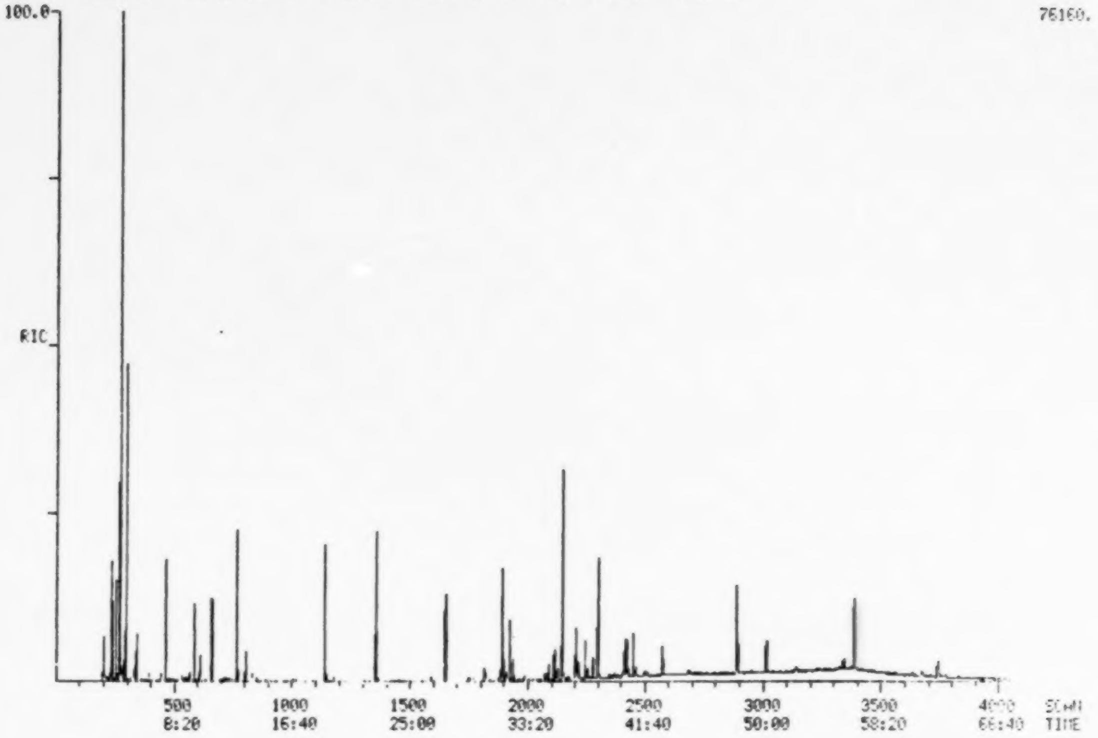
```
RIC                                          DATA: SJ028854MS #1          SCANS    1 TO 4050
08/25/87 14:53:00                            CALI: C0701872 #4
SAMPLE:  ´ -            III-B-3                            STATIC PILE MS
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



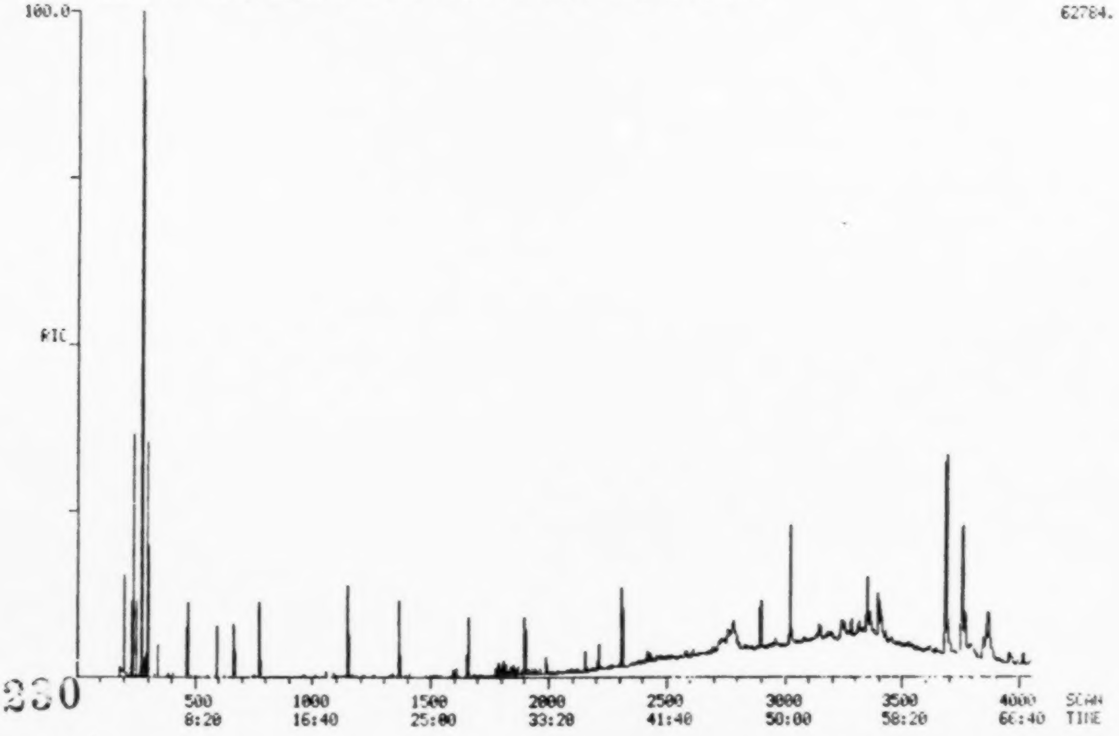
```
RIC                                          DATA: SJ030971 #3954         SCANS    1 TO 4050
10/07/87 14:07:00                            CALI: C0701872 #4
SAMPLE:                 III-B-4                            STATIC PILE
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



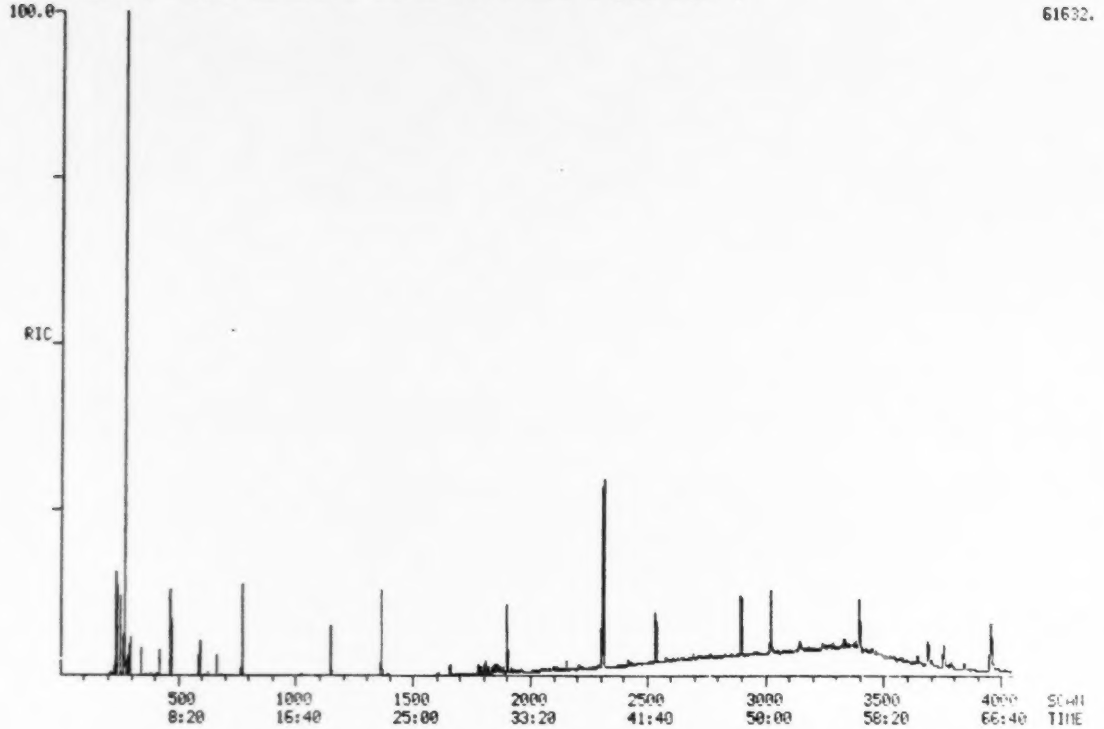
RIC   DATA: SJ030963 #1   SCANS   1 TO 4050
08/28/87 10:37:00   CALI: C0701872 #4
SAMPLE: IV-F-1   AEROBIC/D.B
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



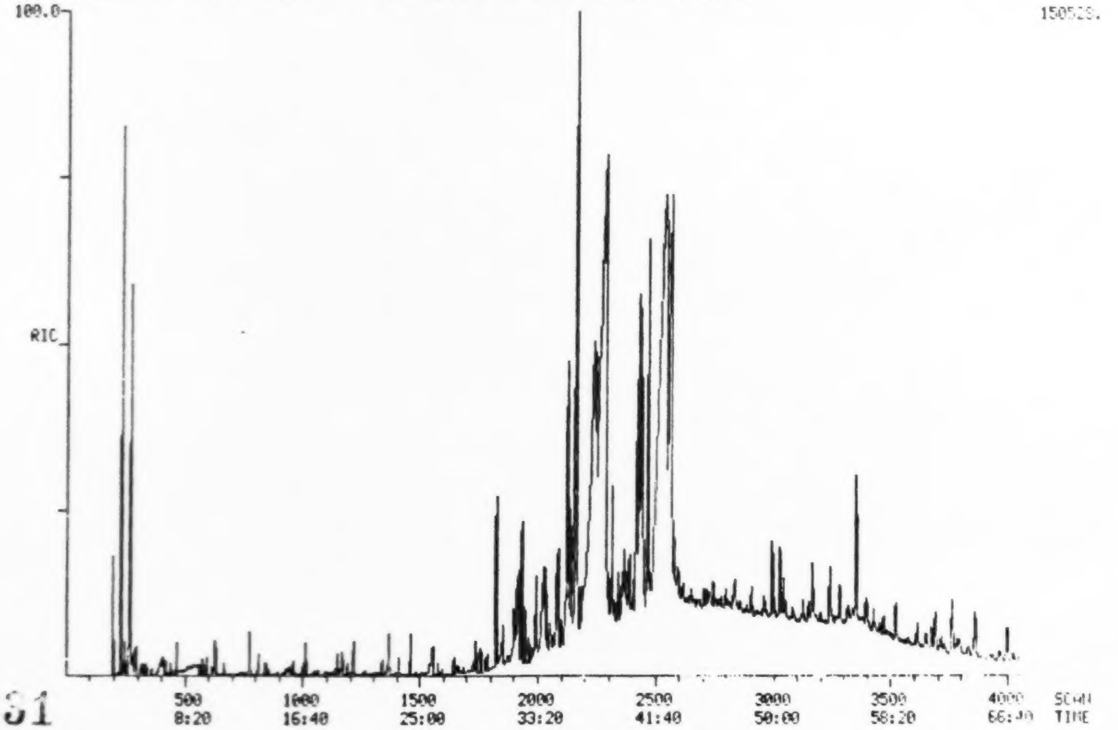
RIC   DATA: SJ030969 #3958   SCANS   1 TO 4050
08/31/87 14:24:00   CALI: C0701872 #4
SAMPLE: III-J-1
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



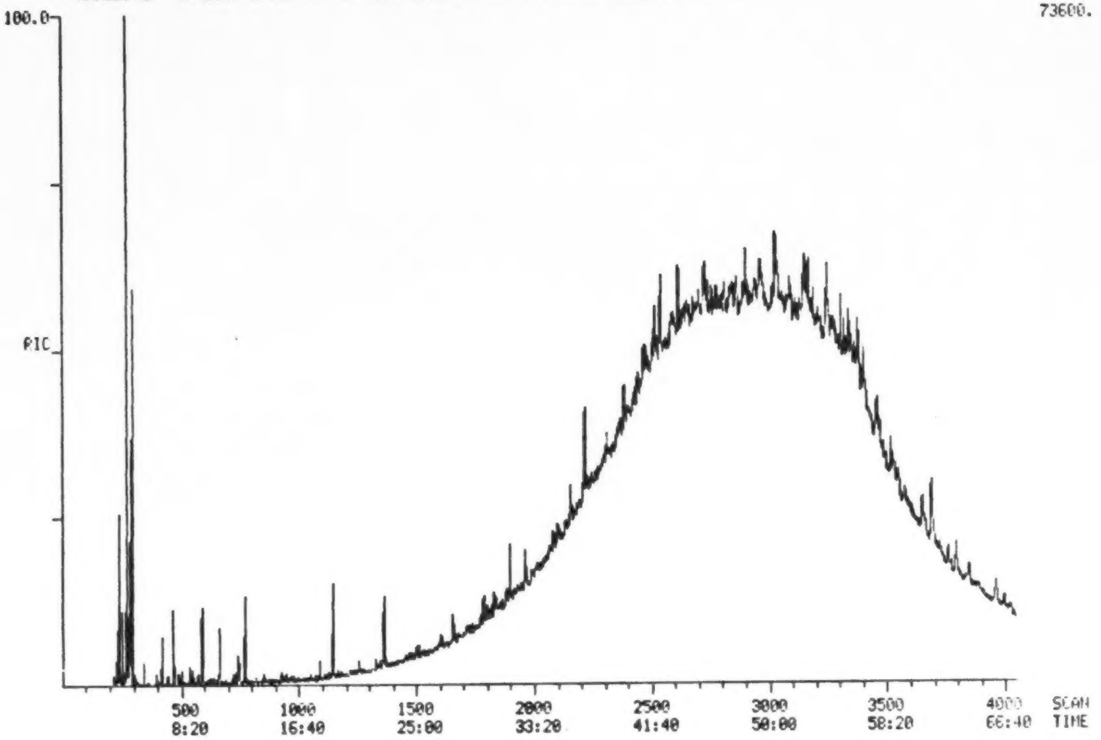
```
RIC                                          DATA: SJ030967 #3958       SCANS    1 TO 4050
08/31/87 11:23:00                            CALI: C0701872 #4
SAMPLE:                IV-D-1                       DRYING BED
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



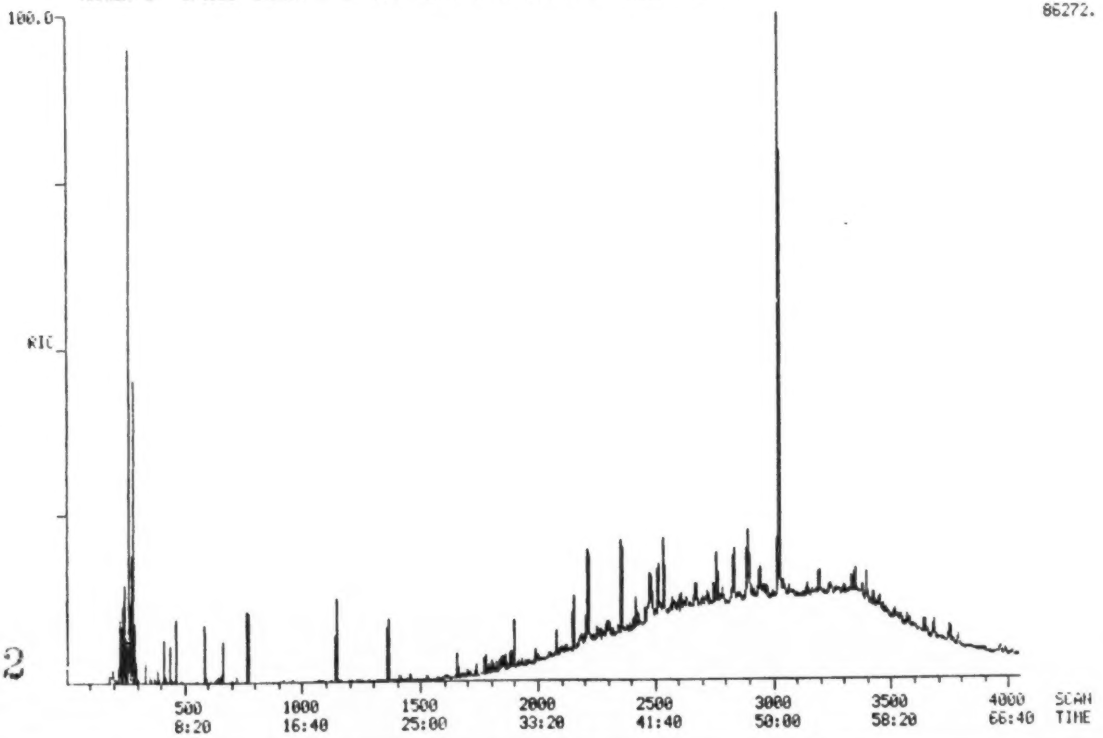
```
RIC                                          DATA: SJ030968 #3963       SCANS    1 TO 4050
08/31/87 12:43:00                            CALI: C0701872 #4
SAMPLE:                IV-I-1                      HEAT DRIED
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



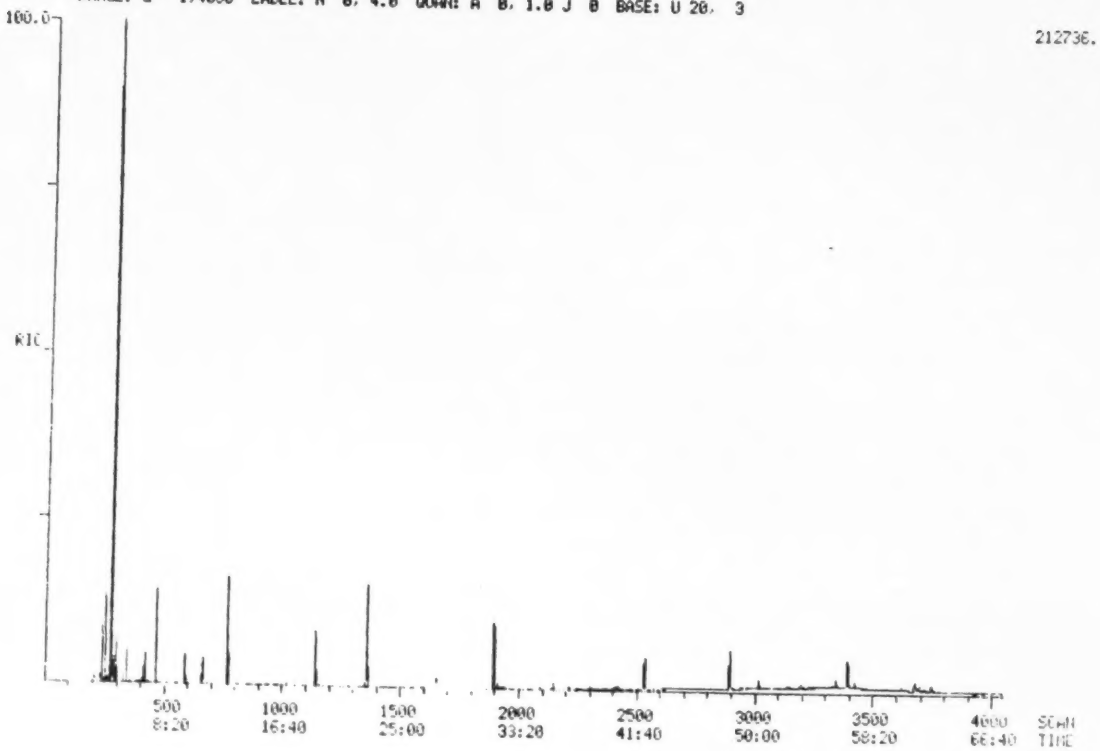
```
RIC                                        DATA: SJ028052 #3960        SCANS    1 TO 4050
08/21/87 13:18:00                          CALI: C0701872 #4
SAMPLE:              . V-K-1                      ZIMPRO
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



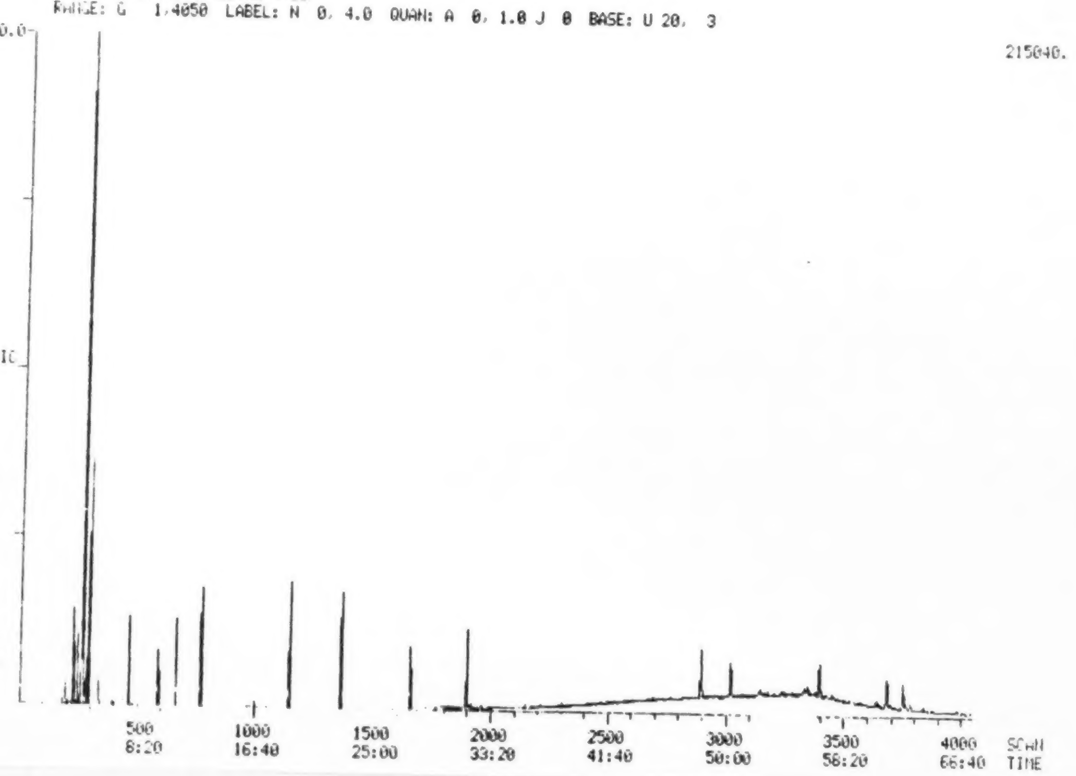
```
RIC                                        DATA: SJ028053 #3954        SCANS    1 TO 4050
08/21/87 14:58:00                          CALI: C0701872 #4
SAMPLE:        . .   IV-B-1                       STATIC PILE
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



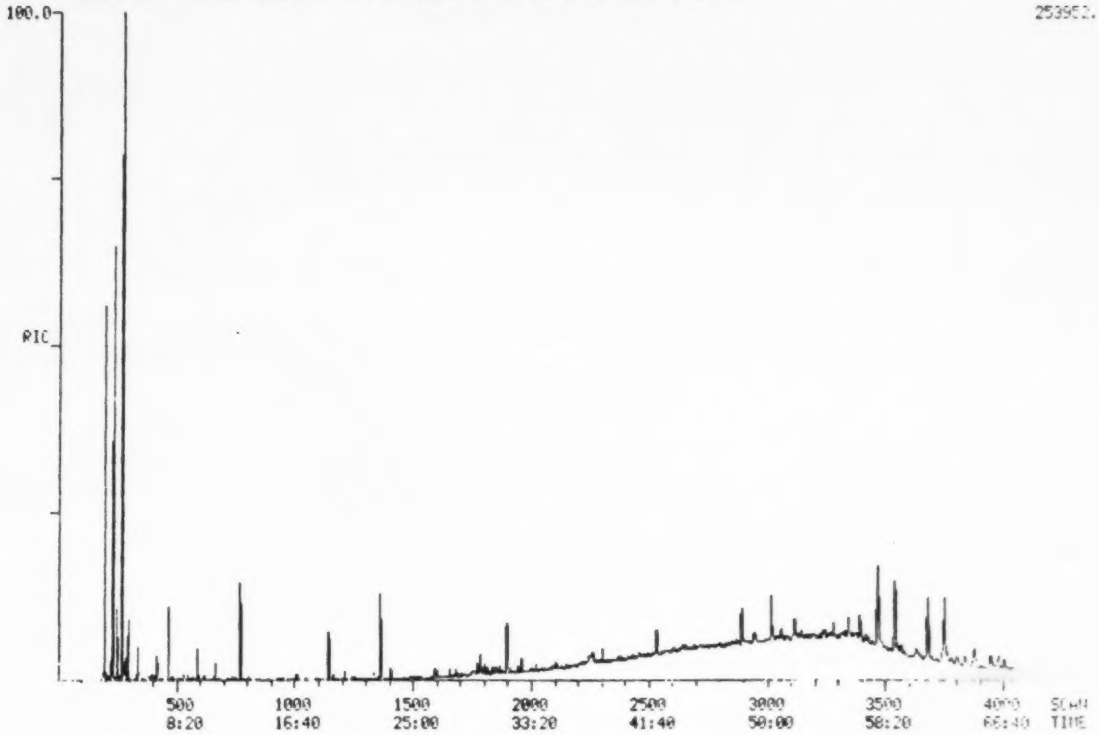
```
RIC
10/07/87 21:20:00                       DATA: SJ032462 #3952        SCANS    1 TO 4050
SAMPLE:             V-B-1               CALI: C0701672 #4
CONDS.: METHOD 1, GC/MS-4-60                  COMPOST
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



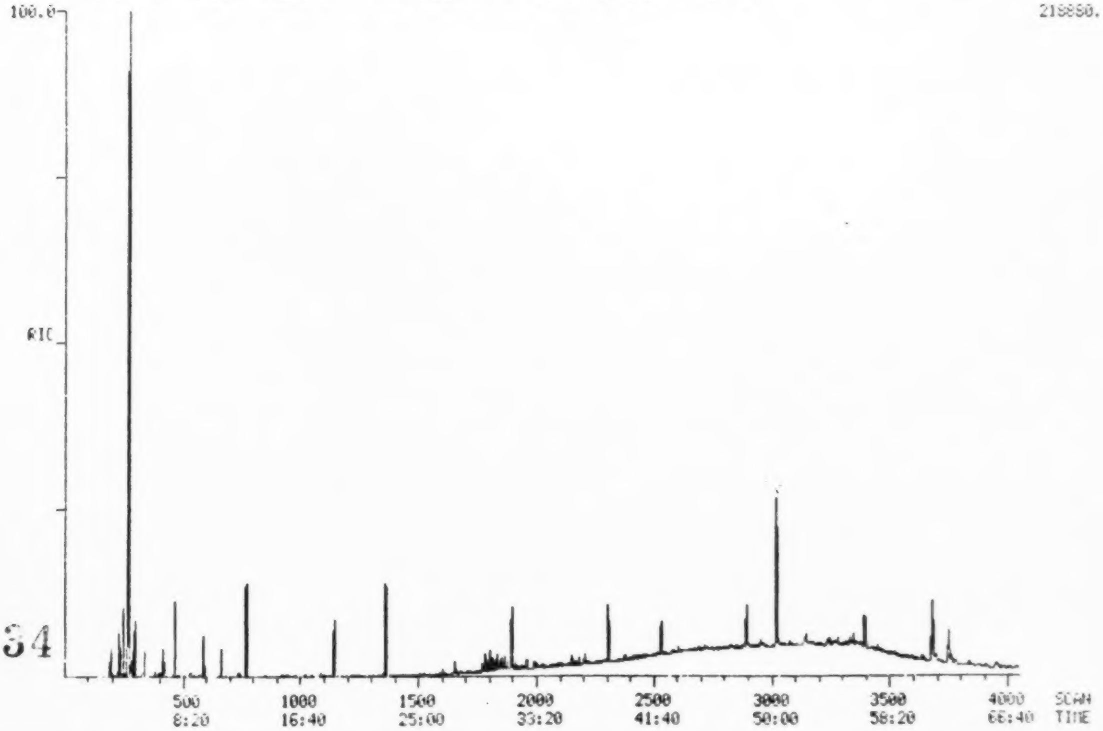
```
RIC
10/07/87 15:26:00                       DATA: SJ030972 #3954        SCANS    1 TO 4050
SAMPLE:             VI-D-1              CALI: C0701872 #4
CONDS.: METHOD 1, GC/MS-4-60                  DRYING BED
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



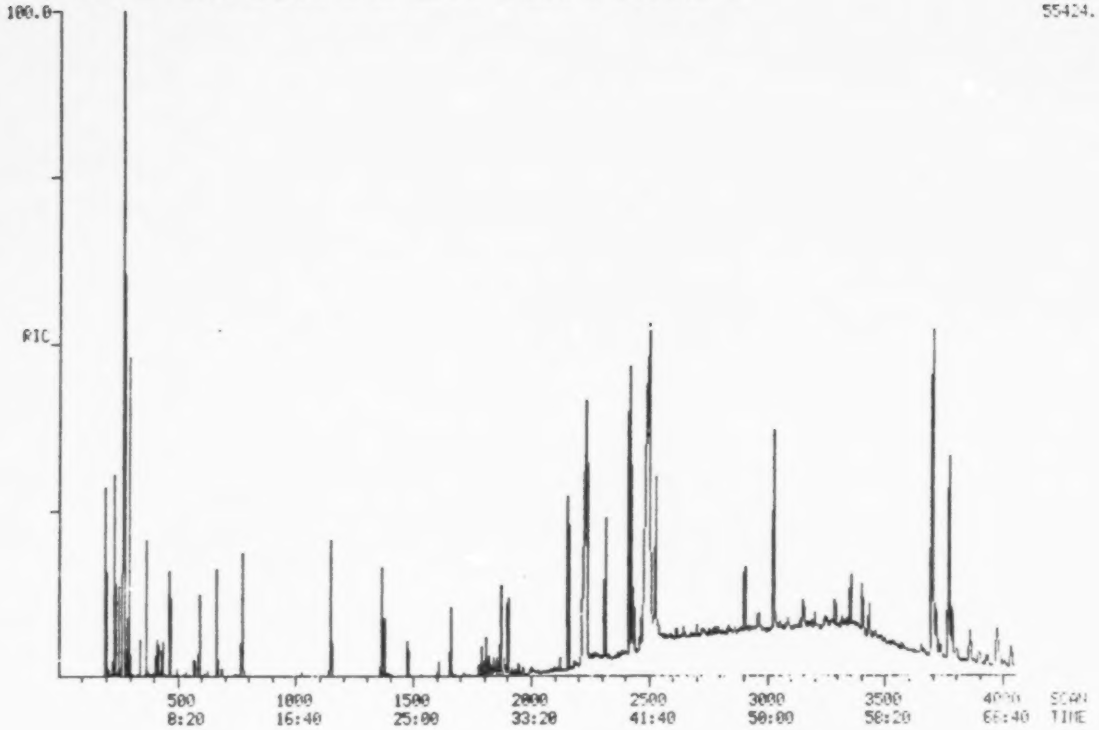
```
RIC                                     DATA: SJ030974 #3950        SCANS    1 TO 4050
10/07/87 18:29:00                       CALI: C0701872 #4
SAMPLE:              VII-A-1            AIR DRIED
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



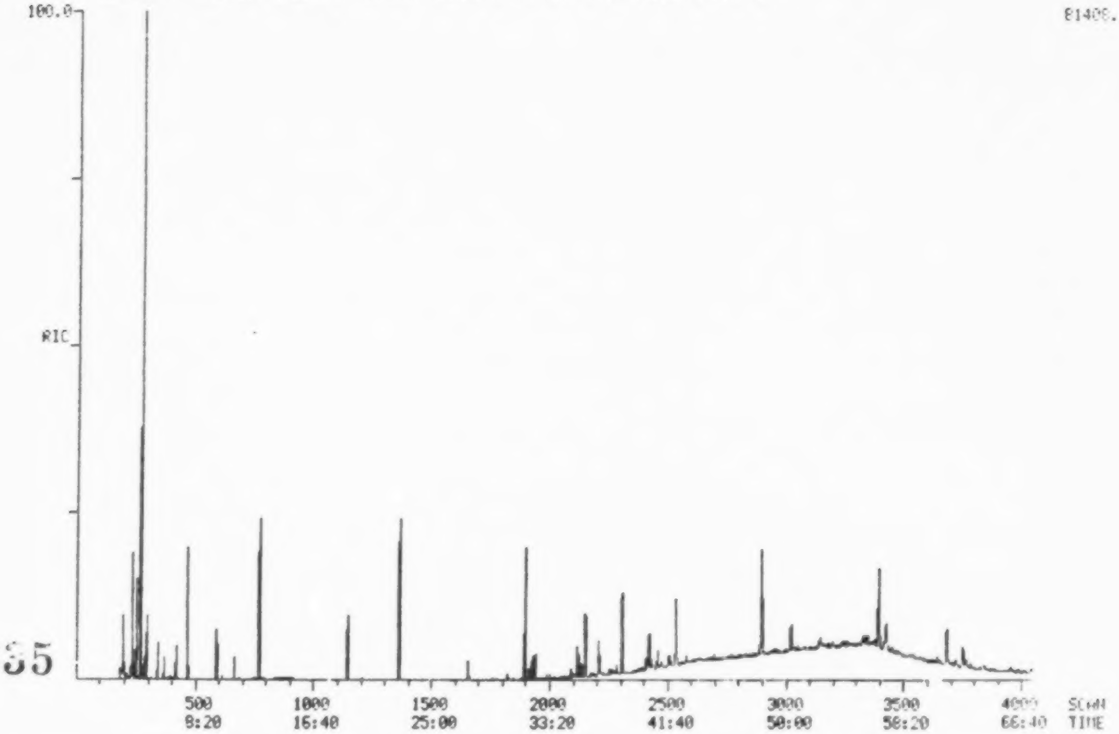
```
RIC                                     DATA: SJ030973 #3952        SCANS    1 TO 4050
10/07/87 16:44:00                       CALI: C0701872 #4
SAMPLE:              VII-A-2               WINDROW
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



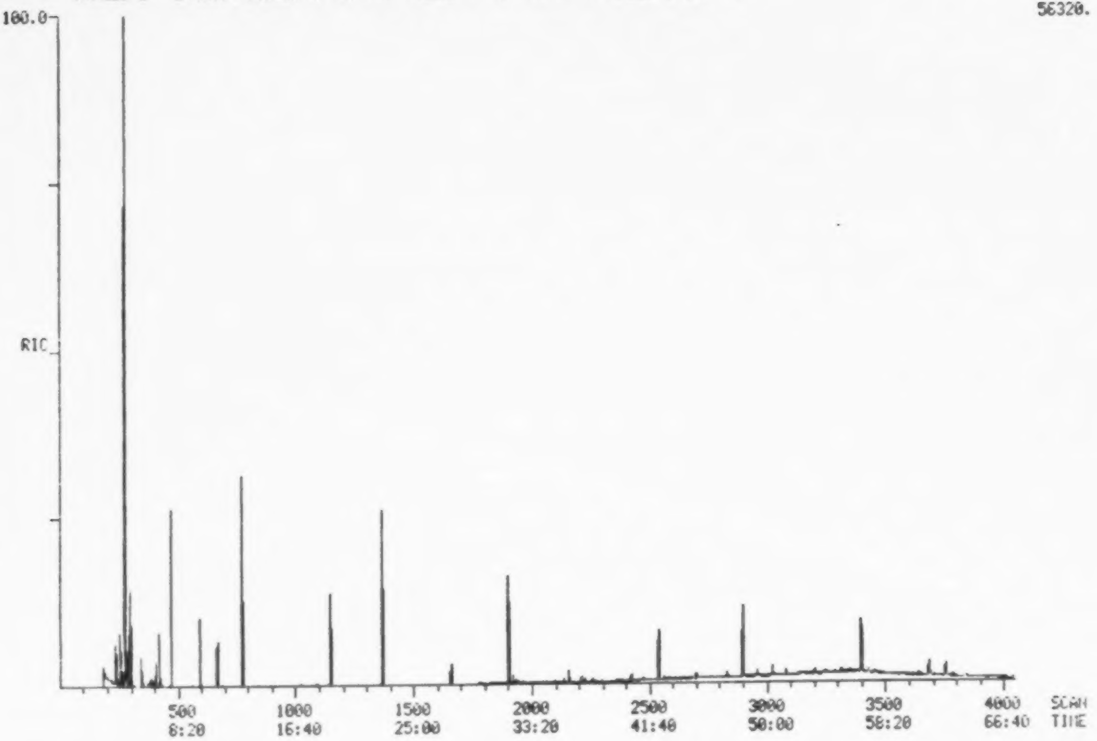
```
RIC                                     DATA: SJ030970MS #3968      SCANS    1 TO 4050
09/01/87 11:45:00                       CALI: C0701872 #4
SAMPLE:                  VIII-D-1                DRYING BED MS
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



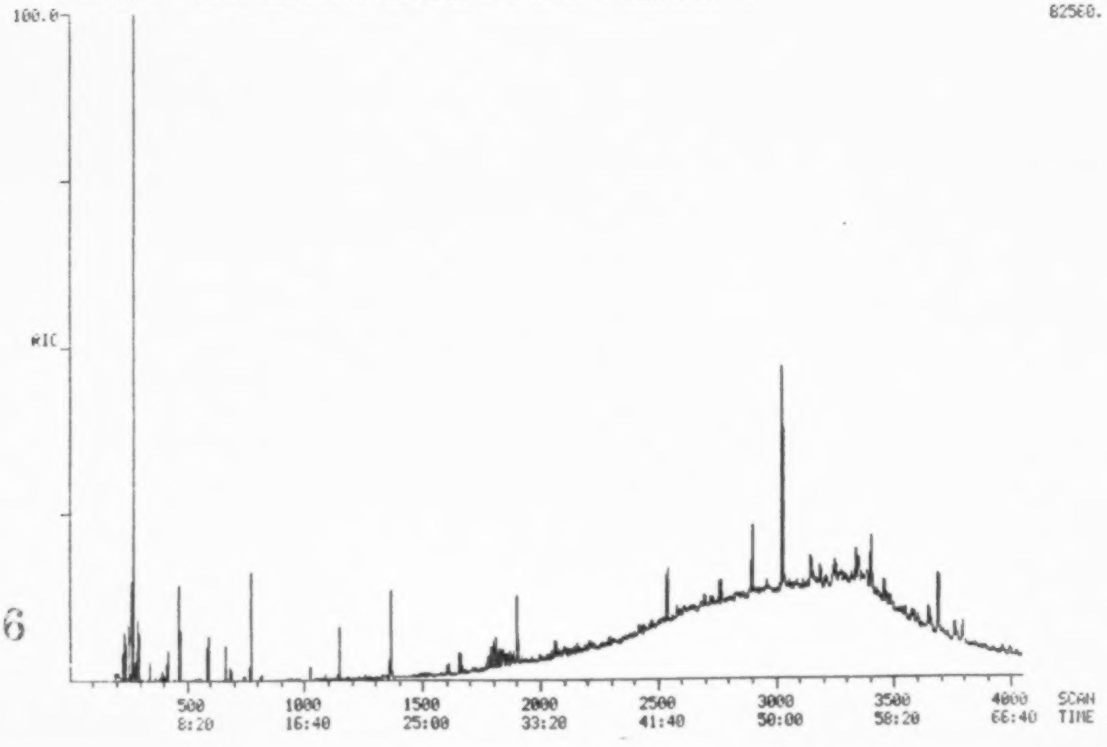
```
RIC                                     DATA: SJ030964 #3953        SCANS    1 TO 4050
08/28/87 13:49:00                       CALI: C0701872 #4
SAMPLE:                  VIII-F-1                  DRYING BED
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



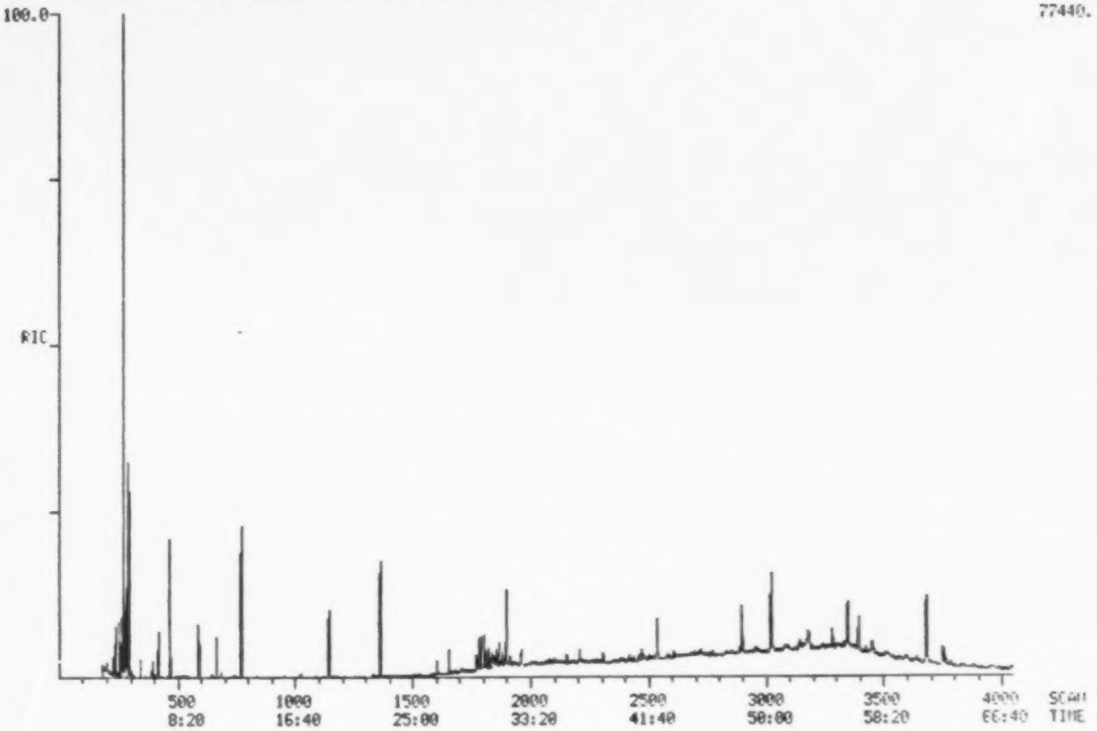
```
RIC                                      DATA: SJ028051 #3956       SCANS    1 TO 4050
08/21/87 11:43:00                        CALI: C0701872 #4
SAMPLE:              VIII-H-1      COMPOST
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



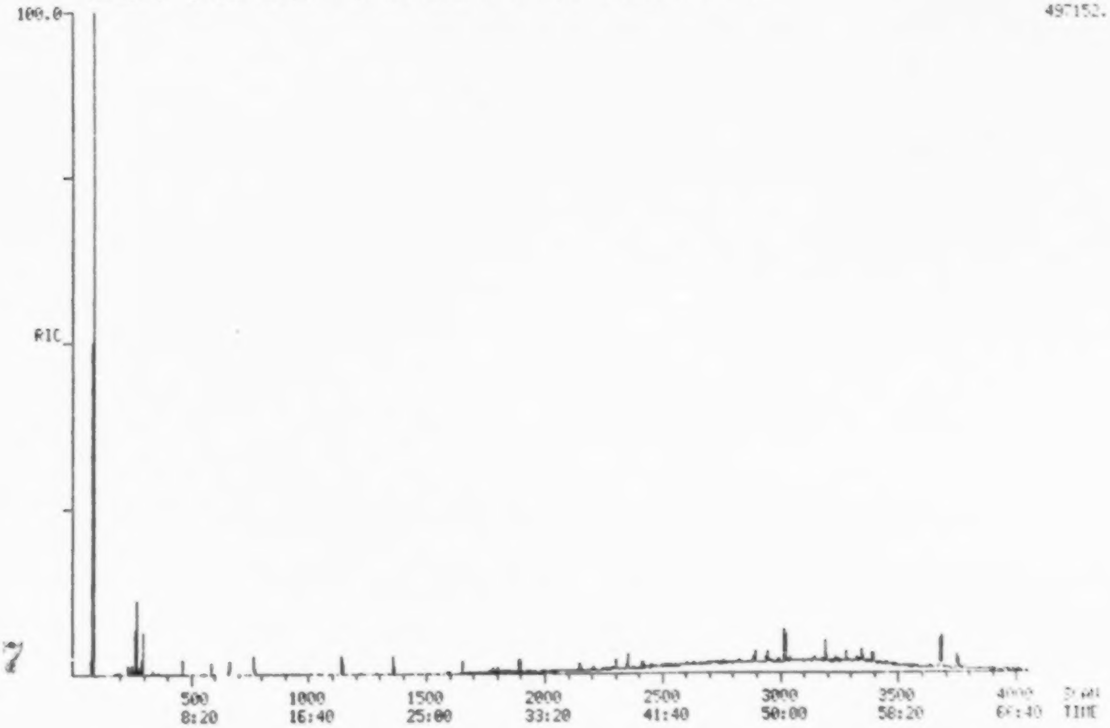
```
RIC                                      DATA: SJ028050 #3957       SCANS    1 TO 4050
08/20/87 15:11:00                        CALI: C0701872 #4
SAMPLE:              VIII-J-1            COMPOST (AERATED WINDROW)
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



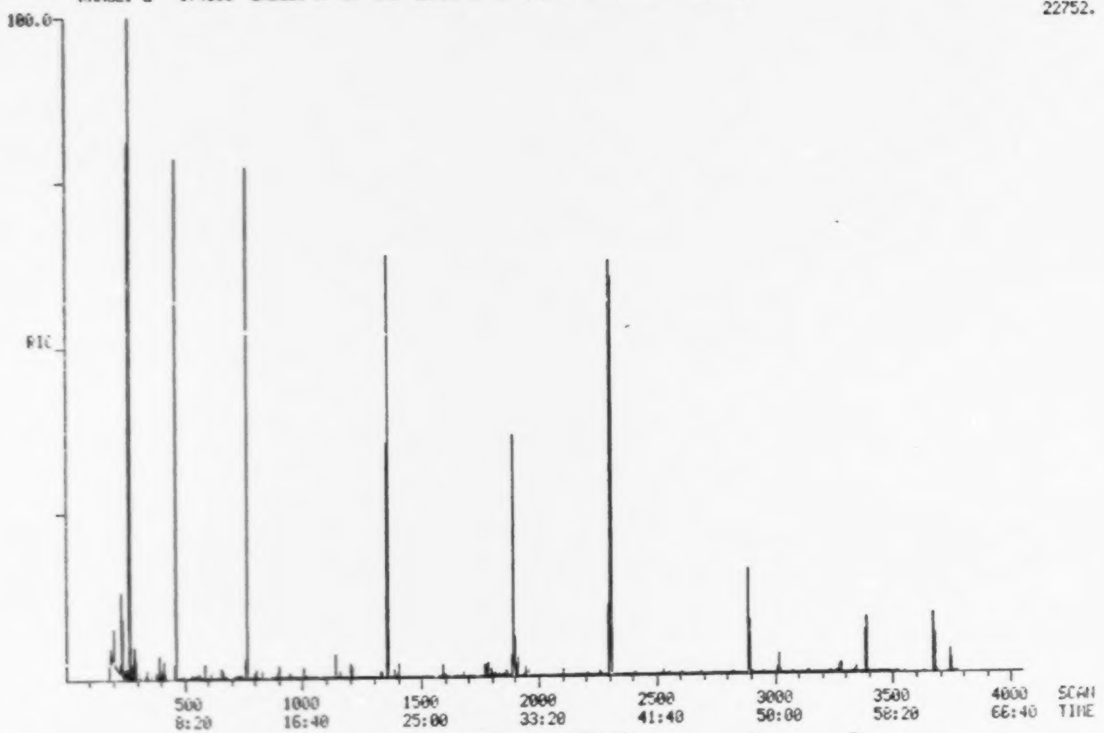
```
RIC                                        DATA: SJ020048 #3950        SCANS    1 TO 4050
09/20/87 13:43:00                          CALI: C0701872 #4
SAMPLE:            IX-A-10                                WINDROW
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



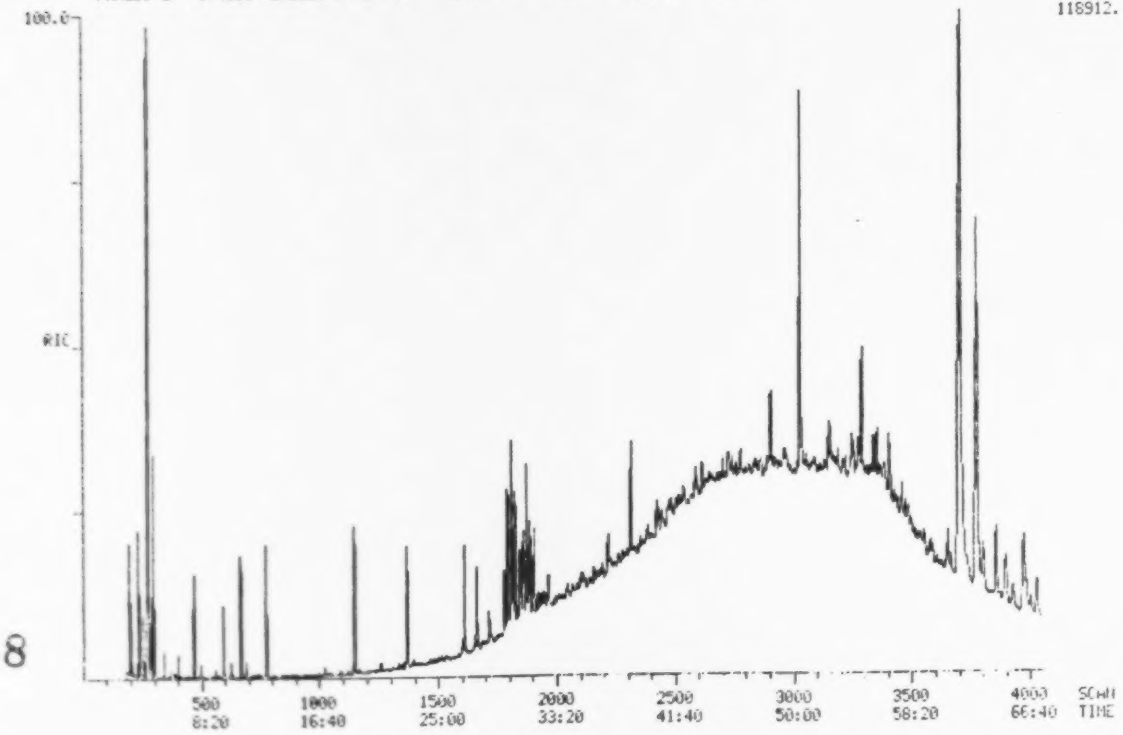
```
RIC                                        DATA: SJ020049 #3952        SCANS    1 TO 4050
08/25/87 13:33:00                          CALI: C0701872 #4
SAMPLE:            IX-B-1                     COMPOST
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



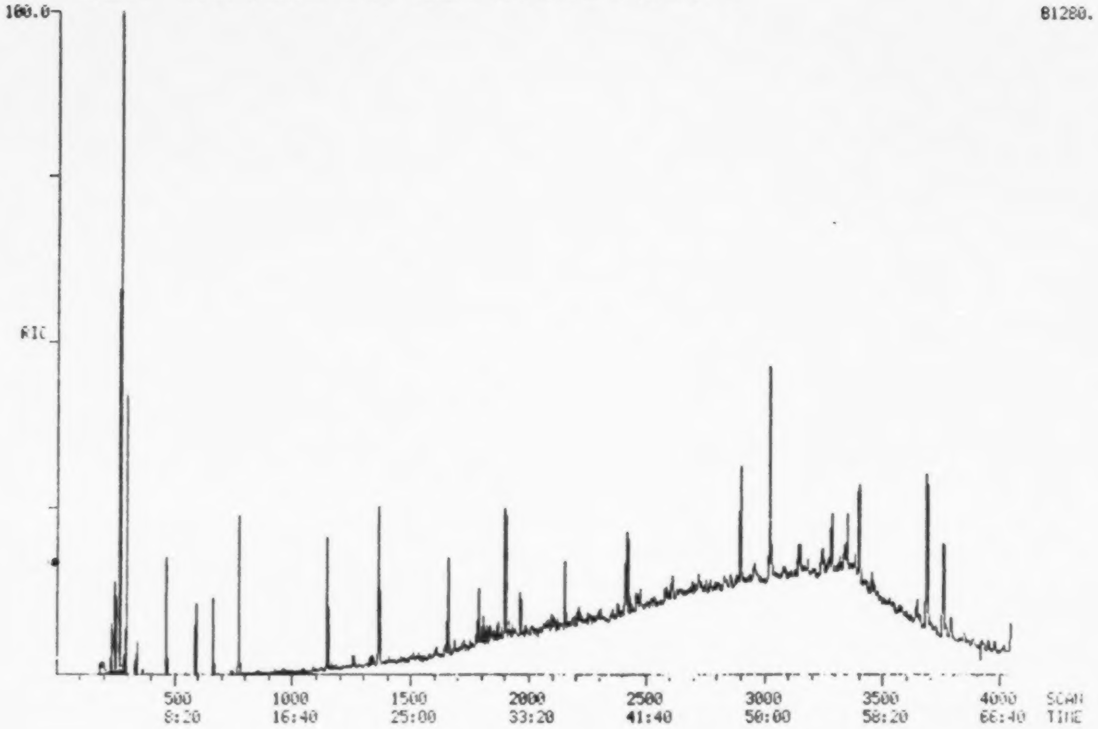
```
RIC                                           DATA: SJ028046 #3943        SCANS    1 TO 4050
06/20/87 10:09:00                             CALI: C0701872 #4
SAMPLE:                  IX-D-1 .              DRIED SLUDGE
CONDS.: METHOD 1. GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



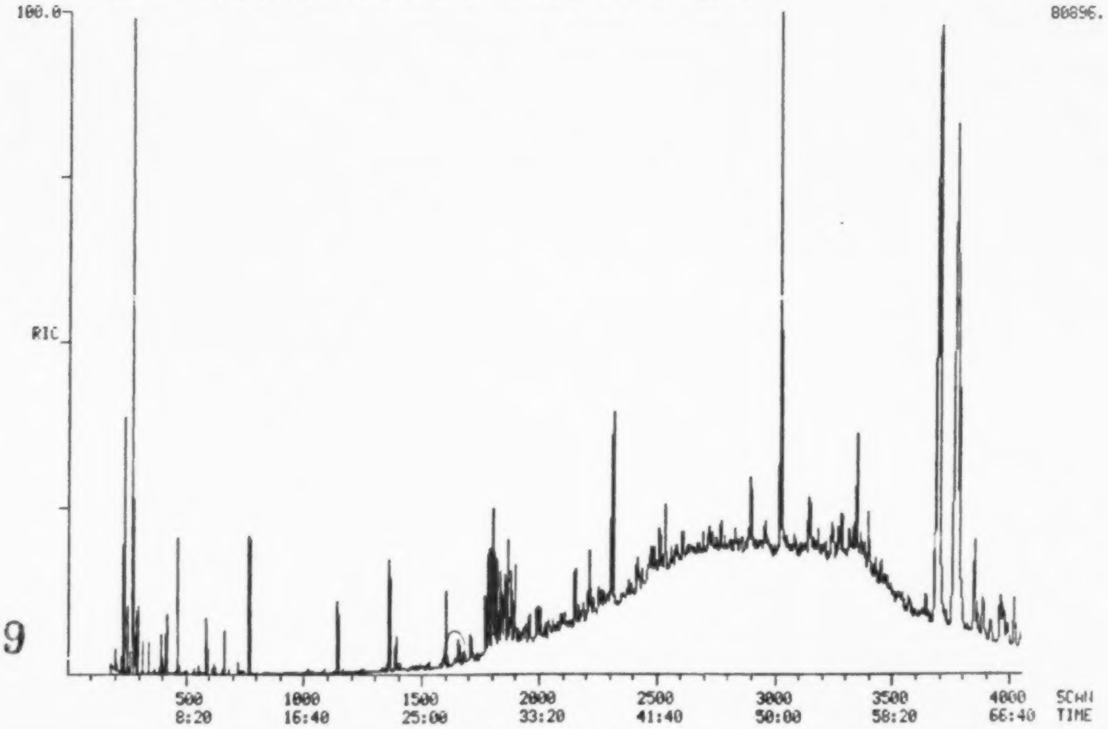
```
RIC                                           DATA: SJ030365 #3972        SCANS    1 TO 4050
05/30/87 15:16:00                             CALI: C0701872 #4
SAMPLE:                  IX-D-3                  DRYING BED
CONDS.: METHOD 1. GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```

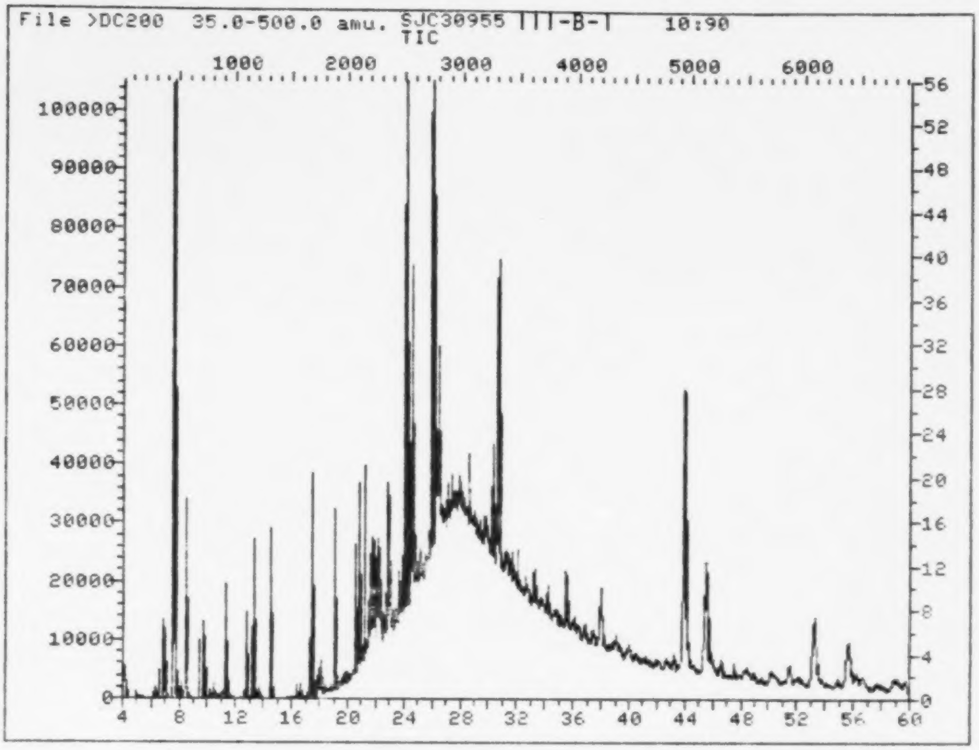


```
RIC                                         DATA: SJ030966 #3958        SCANS    1 TO 4050
08/28/87 15:15:00                           CALI: C0701872 #4
SAMPLE:              . X-C-1                        IN VESSEL
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```



```
RIC                                         DATA: SJ028047 #3953        SCANS    1 TO 4050
08/20/87 11:52:00                           CALI: C0701872 #4
SAMPLE:                IX-D-2                     DRYING BED
CONDS.: METHOD 1, GC/MS-4-60
RANGE: G   1,4050  LABEL: N  0, 4.0  QUAN: A  0, 1.0 J  0  BASE: U 20,  3
```




File >DC200 35.0-500.0 amu. SJC30955 III-B-1 10:90
TIC
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100000 90000 80000 70000 60000 50000 40000 30000 20000 10000 0
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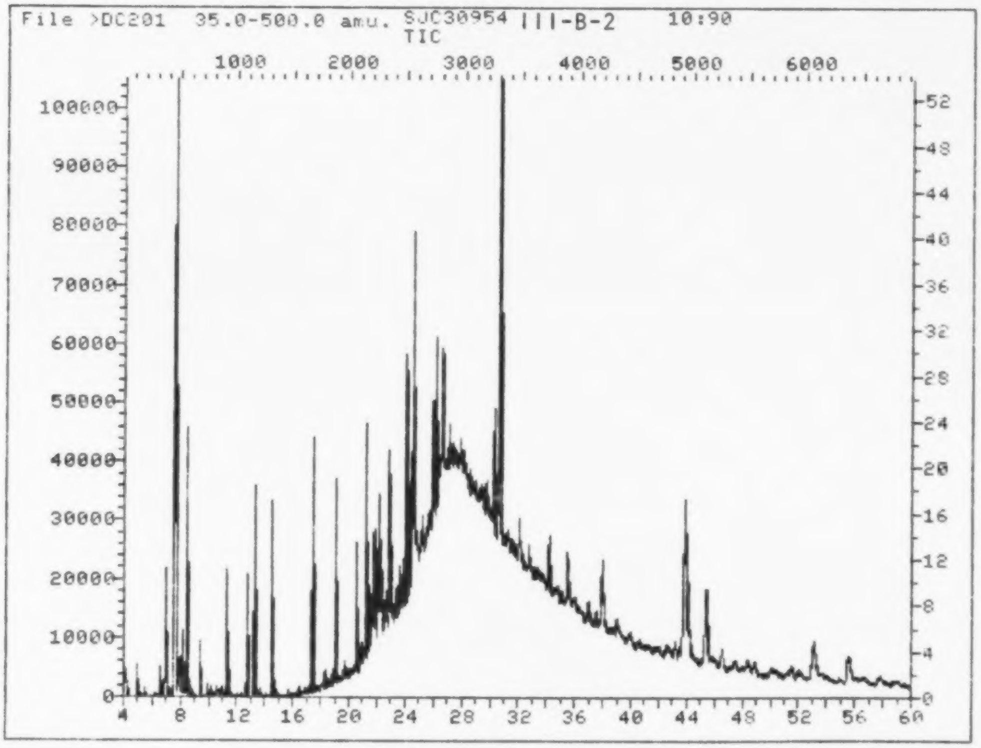
4 8 12 16 20 24 28 32 36 40 44 48 52 56 60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TIC
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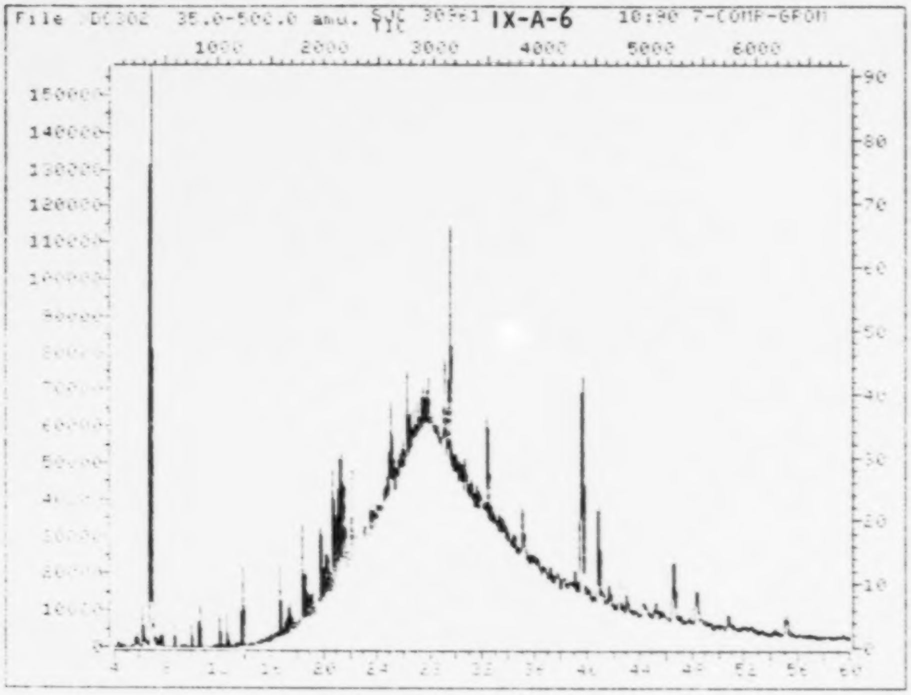
4 8 12 16 20 24 28 32 36 40 44 48 52 56 60


File .DC302 35.0-500.0 amu. SVC TIC 30561 IX-A-6 10:90 7-COMP-GPOM
1000
2000
3000
4000
5000
6000
150000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
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10000
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